JUNE, 1942

Industrial FINISHING

Published Monthly in the Interest of Modern Production Finishing

"ORDERS CARRIED OUT, SIR!"

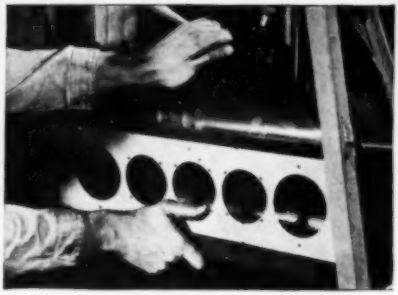
A tough gauntlet to run but O'Shelac IS tough. It also has better build; requires shorter drying time before sanding; is highly adaptable to ALL wood finishing.

ADVANCE PAINT COMPANY

Manufacturers of Wood & Metal Finishing Materials

INDIANAPOLIS, INDIANA

AIR DRY FLEXIBLE LACQUER LICKS TOUGH PRODUCTION PROBLEM . . . .



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1. Air dries to handle in a few minutes time (No Bake Required).
2. Sets up so fast that dirt is no problem—thus dust rejections are eliminated.
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4. It is so flexible that flat sheets may be pre-finished and later blanked and formed or drawn into shape.
5. Made in various sheens, from full gloss to dead flat, all colors—no delays for special formulations.
6. This oil-and-gasoline proof enamel may be dipped, sprayed or roller-coated.

AT Piper Aircraft it used to be a tough job to fit instrument panels into place because it is often necessary to force the pre-finished sheets into shape to insure a perfect fit in each individual plane. Roxalin's one coat, air dry, flexible lacquer stands up under this tough treatment without chipping or flaking, and what is more, the appearance of the finished job is all that is to be desired. Furthermore, a finish that stands up under this tough installation operation in the shop is certainly guarantee that it will give maximum of service in the field.

This is just one example of how Roxalin Flexible Finishes are helping to speed production in the aircraft industry. Investigate our complete line of aircraft primers, dopes, synthetics and lacquers.

ROXALIN FLEXIBLE FINISHES, INC.
Elizabeth, N. J. • Box 161

ROXALIN *Flexible* FINISHES

LET'S GO!

3

TIMES FASTER on all Sanding!

FORGET labor shortage on sanding. ***Any*** green hand is an expert with "Sandy", the Sterling "Speed-Bloc" sander. Any green hand can do THREE MEN'S WORK, and do a BETTER JOB, with "Sandy". Get that "SANDY" SPEED and PROFIT that others know! WRITE! Sterling Tool Products Company, 365 East Ohio Street, Chicago, Illinois.

•

In Metal Working: Sterling Engineers are a concentration of fast, economical QUALITY metal finishing experiences—experience gathered in the finest plants across America. Ask to see a Sterling man!

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VALUABLE BOOKLET FREE!

Get "Helpful Sanding Hints"—a gold mine for production men! Address Sterling Tool Products Co., 365 E. Ohio St., Chicago, Illinois. Don't delay! Write at once! Only a limited supply of this valuable leaflet remains.

Plug-In Compressed Air Driven

Sterling

TOOL PRODUCTS COMPANY

365 E. OHIO STREET CHICAGO, ILL.

ZAPON FINISHES

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U.S. GOVERNMENT SPECIFICATIONS

Finishes are of the utmost importance to military equipment. They must be able to stand up to rigorous conditions anywhere on earth. Zapon has developed a very complete line of finishes to meet U. S. Government specifications. Whether it's bombs or cartridge cases, helmets or glider planes, we can satisfy U. S. requirements for the finish.

Finishing never stands still. Finish for a bomb is radically different from that for a glider. Zapon constantly meets every challenge, improves the old, brings forth the new and suggests ways for industry to better apply finishes. All in war as in peace.

With changes so frequent, we believe through our experience and knowledge of conditions, we can be of greatest service if you consult with us.

ZAPON

ZAPON DIVISION · ATLAS POWDER COMPANY

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INDUSTRIAL FINISHES

EIGHTEENTH YEAR OF PUBLICATION

Industrial FINISHING

Reg. U. S. Pat. Office

Published Monthly in the Interest of Modern Production Finishing

Vol. XVIII, No. 8 JUNE, 1942 $2.00 a Year

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Practical Publications, Inc., 1142 North Meridian Street, Indianapolis, Ind.

Eastern Representative: C. A. Larson, 254 West 31st Street, New York City; Phone Penna. 6-9049

Letters from Readers...

OF INDUSTRIAL FINISHING

These letters (and many others) were answered recently by the editorial department, but are published here to reveal certain interesting trends of desire and activity in the industry, and to encourage additional inquiries, comments and suggestions. Further information about any of them can be obtained by writing this office.—Editor.

Painting Shells

Would you please send us copies of your INDUSTRIAL FINISHING, or any other literature you might have regarding the painting of ammunition? We would like, in particular, anything pertaining to the painting of 37-millimetre shells.—W. C. Co.

Luminous Paint

We will appreciate it if you will give us the names of enamel manufacturers that make an enamel that will glow in the dark.—P. Mfg. Co. (Brush and Comb Sets).

Will you kindly give us the names of manufacturers of luminescent paints and crystals?—T. O. Co.

Several companies now manufacture luminous paints; we are sending you their names and addresses.—ED.

Luminous Paints

We noticed a very interesting article in your March 1942 INDUSTRIAL FINISHING, by W. J. Miskella, regarding blackout paint that glows in darkness. We are interested in material such as this and would appreciate your advising us the names of concerns from whom we can purchase same.—H. Mfg. Co. (Woodwork of Merit.)

We would like to get in touch with a manufacturer of luminous paint, preferably of a non-radium nature, and would like to obtain the names of a few companies specializing in this type of paint. We are conversant with a few early experiments in this line, particularly those paints activated by previous exposure to strong light, but we believe there is an outstanding non-radium paint on the market today of prolonged luminosity, and it is this that we are interested in.—T. M. & S., Montreal.

Information supplied.—ED.

"Spinning" Machines

Please send us names of manufacturers of Spinning Machines, used for drying small parts after dipping in varnish.—J. D. Co.

One of the machines, which we think you have in mind, is advertised on page 5 of April 1942 issue of this magazine.—ED.

Finishing All Metals

I am interested in obtaining all available information you have concerning all types of finishing and methods of finishing, such as used on dow-metal, zinc-base die casting, aluminum, brass, terneplate, steel and stainless steel.

This would be a handbook to cover preparatory operations, such as preparatory metal treatments, primers and finished coats.

If you are not able to furnish me with this information, would it be at all possible for you to refer me to

VINDOLAC

Still Available to Our Regular Trade, Also

DU BAR BLEACH **WATEROIL STAINS**
FILLERS . . . No. 1900 CLEANUP POLISH

and numerous other items

Although most of our facilities are now directed toward manufacturing Government products, we are still making every effort to supply regular customer requirements.

V. J. DOLAN & COMPANY, INC.
Mfrs. of "Unquestionable Quality" Industrial Finishes
1830 N. LARAMIE AVENUE CHICAGO, ILLINOIS

GKS OVENS

For Maximum Efficiency

There's a size and a type GKS Oven for practically any baking or drying problem. But, if special equipment is required, experienced GKS Engineers are ready to design to meet your needs. Phone, Wire or Write today.

GEORGE KOCH SONS, INC. Evansville, Ind.

PASSED AND APPROVED!

Our Rust Inhibiting Primer No. 23696 and Lustreless Olive Drab No. 23680

Have been approved by the Quartermaster Depot Holabird after undergoing rigid and exhaustive tests.

Can be brushed or sprayed, air dried or baked and will fit into any production schedule.

Manufacturers of equipment, with specifications that require these protective coatings, are invited to write us for liberal working samples, prices and delivery dates.

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THINNERS
ENAMELS
METALIZED FINISHES
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UNITED LACQUER MFG. CORP.
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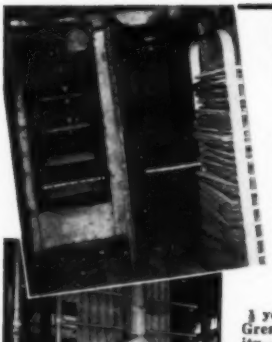


PAINT DRYING

How Infra-Red Rays Can Help You

Send for the Booklet

Get acquainted with the possibilities of greatly speeding up your paint drying schedules and cutting your costs by converting to the INFRA HEAT SYSTEM. Your present oven can be converted to make it efficient and fast as the latest available. Or a new INFRA-HEAT oven can be installed to meet your needs. It's all in the METHOD of heating. The INFRA HEAT SYSTEM combines the many advantages of Infra-Red Rays with the uniform heating of the convection type Hot Air Circulation Heat.

¼ your present drying time or less—Greater paint hardness and durability—More brilliance to the finishes—Less oven-space required are some of the many results achieved with INFRA-RED RAYS. Investigate! Send for the booklet.

INFRA-RED EQUIPMENT CORP.
1225 W. Washington Blvd.
CHICAGO, ILL.

someone who would be in a position to take care of our needs?—M. B. (Finishing Engineer.)

We are sending you tear sheets of some articles published in past issues of I. F., but this information does not cover all of what you seem to want. Consult your local (Chicago) public library, engineering book store and engineering schools.—Ed.

"Photo" Finishes

We are writing to inquire if you can give us any information regarding "photo" finishes; where the materials can be purchased, prices, etc.? We will appreciate any data you can furnish us.—Furniture Service Shop.

If you have in mind clear protective coatings to apply to photographs, several manufacturers who advertise in this magazine can supply you. We are sending you their names.—Ed.

Coating for Fabric

In your publication, INDUSTRIAL FINISHING, April 1942 issue, we notice an inquiry asking for the names of companies who are in position to apply a thin coating material, in solution, to a very light-weight cotton fabric. Our company is equipped with coating machines. We would like to contact the corporation for whom this inquiry was made.—Han Tec, Inc.

We would like the name of the "M. Corporation", who wrote your company asking for manufacturers who have equipment available for coating fabrics. We now have the capacity open for coating a fabric of this kind and therefore would appreciate the company's address. — Cellusuede Products, Inc.

In your April 1942 issue of INDUSTRIAL FINISHING, one of your readers, identified as "M. Corporation", inquires about concerns who do coating of themoplastic materials. If you would care to pass the information on to them, you might advise them that we do coating of vinylite, which is a polyvinal chloride thermoplastic material on cotton fabrics. If they will write in to us, and send a sample of the type of material they want, we will be glad to go into the matter further. —The Landers Corp.

We note that one of your readers is interested in a thermoplastic coating for canvas. Please be advised that we probably can supply such a coating and we may be able to do the coating operation if the concern is interested.

1-9-4-?

Some year the war will end.

Swords will be beaten into plowshares, and golf clubs and refrigerators.

There will be a swing back into the things we buy because we like them and not because they are a grim necessity.

You are planning these things now, or should be. Let us plan with you toward the finish for 194?, whenever it is.

We welcome any call for cooperation on long-range planning for the finish of the future.

Meantime, for 1942 and as far as we can see, we shall do our utmost to supply our customers with the best available materials and service permitted by wartime conditions.

The Varnish Products Company

5208 HARVARD AVENUE

CLEVELAND, OHIO

"smooth sailing with SEA-LAC"

WAR ORDERS SAIL THROUGH ON TIME

when finished with SEA-LAC . . . .

Be sure to specify SEA-LAC ***perfected*** Zinc Chromate Primer for perfect flow and adhesion,

perfected Baking Enamels to suit your baking schedule.

perfected Lacquer Enamels for all materials and purposes.

Write for samples and information.

Duralac Chemical Corp.

84 Lister Ave. Newark, N. J.

SEA-LAC

In any event, if we cannot supply a coating or do the work, we can suggest a source of supply as soon as we receive complete details. — Celanese Celluloid Corp.

In your April issue, entry is made as to concerns, "in position to coat or apply a thin coating of thermoplastic materials in solution to a very lightweight cotton fabric, the application being on one side only". We are working on the above type of coating, and would greatly appreciate your advising the inquirer of our interest.—Columbus Coated Fabrics Corp.

Like Plated Finish

We would appreciate some information on a sprayed finish that will take the place of plating. This is to be used on wood. We understand that there is such a product on the market. We are especially interested in gold and white metal finishes, etc.—W. S.

Wood-Flour Composition

Can you furnish us with the names of manufacturers who can supply us with a wood-flour composition for molding purposes, or some similar substance? If this cannot be procured, where can we secure a formula for the above?—B. J. Co.

We wonder if you could give us any information on a formula, or if possible, someone who makes a mixture of pressed wood? We understand this is made from a wood flour in combination with a binder. While we are able to contact some houses who make wood flour and others who manufacture various binders, we would like to know if there is a formula available that is used by concerns which, at the present time, are manufacturing these pressed wood products.—J. Co.

We are not in position to give out or endorse any formulas for manufactured products. We suggest you consult manufacturers of composition ornaments, as they are specialists in this work and they can sell both standard and custom products probably much cheaper than you could make them. —Ed.

Penetrating Sealer

In the absence of shellac in finishing materials, we are interested in finding material to use in the impregnation of wood for finishing. We have been given to understand that the use of Tur-

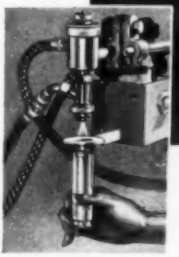
(Continued on page 83)

SET THE PACE FOR PRODUCTION

WITH THESE NEW Paasche AIRPAINTING UNITS

Paasche streamlined airpainting units can speed your finishing operations the way they do hundreds of other War plants. Performing on toughest production schedules, they have turned out millions of perfectly coated shells, bombs and other parts in record time.

Typical of Paasche ability to create the right unit for any job are those shown on this page. They are precision built to rigid engineering specifications . . have the stamina it takes to assure peak performance twenty-four hours a day. Your finishing problems will end and you'll never have to worry about "too little, too late" when this Paasche equipment goes to work for you.



Two Operator Semi-Automatic Unit for Airpainting Interiors of 20 M.M. Steel Shell Cases

Average production up to 72,000 pieces per twenty-four hour day. Has four coating stations, a pair on each side of booth. Operator simply places shell cases in holding and shielding fixtures which guide pieces to proper position. Then automatic airbrushes, with specially designed multiple-heads apply a perfect coating. Larger units for 37 m.m. to 105 m. m. sizes.

Automatic Unit for Coating Interior and Exterior of 20, 37 and 40 M.M. Shells

Production 1,920 pieces per hour with 2¼ minutes drying time. Completely automatic, minimizes handling. Oscillating gun mounting assures perfect coating—conserves material. Self-cleaning water wash exhaust booth minimizes "time out" for cleaning.

Write

If you are in War Production, let Paasche airpainting equipment help you increase output and solve your finishing problem. Send for Bulletin F3-42 giving detailed information and specifications on Paasche equipment for coating shells, bombs, land mines, grenades, fuse parts, etc.

Paasche Airbrush Co.

1917 DIVERSEY PARKWAY
CHICAGO, ILLINOIS

THE LILLY COMPANY

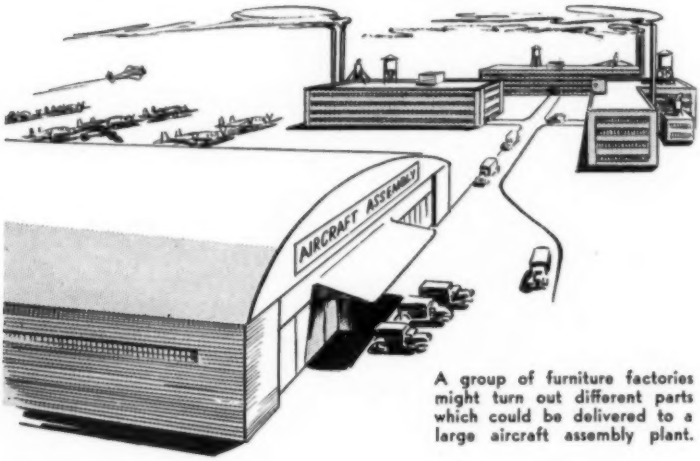
HIGH POINT, N. C.

The "Spirit of '76" .....and '42

Soon after Japan attacked Pearl Harbor, a youngster of less than teen age appeared at a recruiting station saying that he wanted to join the Army to fight the Japs. Jokingly, the recruiting officer said "Why you're only a kid." "Sure", replied the youngster, "but the Japs have kids and I can fight them". This is the spirit that has pulled America through all its crises since '76 and it will pull America through the present crisis. Literally speaking, this is also the same spirit that has carried us (The Lilly Varnish Co.) through three wars and several depressions—and it will also carry us through the present crisis. Since 1865 we have supplied finishing materials for both peace-time and war-time purposes and our facilities for carrying on such operations are better than ever. If you need "war-paint" or "peace-paint" these facilities, including three plants at Indianapolis, Ind., High Point, N. C., and Gardner, Mass. are at your disposal.

LILLY VARNISH COMPANY
INDIANAPOLIS, IND.

Airplanes to Come From



A group of furniture factories might turn out different parts which could be delivered to a large aircraft assembly plant.

THE conversion of plants in the furniture industry to war effort is a subject of great importance. I realize the necessity that some such action will have to be taken by this industry. I also realize the tremendous job that is ahead of us.

Conversion is a big subject. It is not going to be easy. And to any of us who read of the tremendous contracts that have been let by our government, we possibly see a figure there which seems magical—cost, plus. I want to tell you that along with that cost there is not going to be much plus, unless it's plus a lot of hard work. We must realize that. We must face it with our eyes open, and in doing so be capable of doing that much better job.

I feel quite certain that our industry, as a whole, is going to be ready and willing; and when the time comes that our Government needs anything we can contribute, then let us all hope (and I think I can safely speak for our industry) that we can say to our Government, to our armed forces, and to our procurement bureaus, that it will not be necessary to legislate the furniture business into the defense of our country.

Making Aircraft Parts Offers Interesting Possibilities

With what little experience I have had in doing work for the Government in the past couple of

---

Part of an address delivered at the First National Defense Market Dinner, at the American Furniture Mart in Chicago, Illinois, April 28, 1942.

Furniture Factories?

BY CHARLES C. LINCOLN

Technical Consultant for
the War Production Board

The Furniture Industry Branch of the War Production Board is vitally interested in helping the furniture industry convert at least a portion of its facilities into war work, and the production of aircraft parts is a strong probability.

years (and that has been mainly in the aircraft end) I am frank to say that I believe our industry can be more helpful in the aircraft end than in any other single branch in our war effort.

As we all know, there is not as much strategic aluminum and magnesium in the world as we once thought we had. A year ago, I dare say, our armed forces felt that there would be sufficient production of aluminum to manufacture the fighting planes and trainers necessary in building our air corps. With the superimposed program which has been established by our President, and appropriations made by our Congress, instead of attempting to build 50,000 planes a year, we are trying to go up to 120,000; 150,000, and probably higher. Accordingly, it has become necessary for the Materiel Division of our Army, with headquarters at Wright Field, and by our Navy, to look for substitutes for the strategic materials.

Back to Wood Aircraft Again

As we all know, until a few years ago, practically all of our airplanes were made of wood. During the past few years they have been made of metal, and it has been very difficult to sell the Army and Navy on the idea of going back to wood. At the moment it is necessary; and so far as is presently known, wood will be the chief substitute for strategic aluminum in the construction of airplanes.

At the present time, production is being carried on in this country for aircraft component parts of wood to go, not only on our trainer planes but on our combat fighters and on our heaviest bombers—wherever possible, under this conversion from strategic metals. Those parts have only been in production for the past few months, and by September there will be a tremendous flow of wooden parts going into practically every airplane now being built in this country.

It is a difficult job for any of us, as furniture manufacturers, to take our cards, knock on the doors of one of the large aircraft plants, and walk out with an order. Unfortunately in the furniture business—or possibly I should say fortunately, because that is one headache we haven't dealt with—it is not necessary for us to go into long

detailed engineering of what we are doing. It doesn't make any difference to us if we are building 500 suites of furniture. We have 500 dressers. And fortunately, the dealers to whom we ship this merchandise do not have to bother with the fact that one dresser is not going to be exactly 1/32-in. in size compared with the other one. Those parts stand as a separate unit.

Close Measurements and Careful Inspection

In aircraft it is different. Every part must be first engineered from its present status in metal; its structure must be designed in wood. It must be stressed. There is a certain load which that particular part has to carry, and engineers must tell us how thick the ribs must be, how many spars are needed, where they should be placed, and how heavy the skin should be in order to meet that load characteristic.

At times some of us have probably been provoked at our dealer friends who may have taken out a magnifying glass and looked over certain furniture that we shipped them. Well, I want to tell you, with all due respect to our friends from the Army, that some of these Army and Navy inspectors will put our furniture dealers to shame when it comes to careful inspection. If we think our dealers have used a magnifying glass, then most certainly some other inspectors, with whom I have had a little experience, are very accomplished with a spyglass.

I mention this because I think we should realize what we are facing —when, as and if we do get into aircraft production. And I make the prediction that it will probably be necessary. How soon none of us know, but certainly within the period of a very few months I believe that a sizeable proportion of the entire facilities in the woodworking furniture industry in this country will be called upon to make at least a partial contribution to the manufacture of aircraft.

Aircraft Work Calls for Precision Manufacturing

When that time comes, let's be awake to what we are facing. It is going to require a precision-type of manufacture that most of us today know absolutely nothing about. It should not be too disturbing, on the other hand. Possibly it will do us all good. We may emerge from this present war effort, when, as and if we get into it, as better manufacturers of furniture; and I believe we all know there is room for improvement. But we should face the fact that it is going to take a different type of thinking. It is going to take a type of planning and systematic study of a program which I am afraid none of us have ever injected into our individual pursuits in manufacturing furnture. We should realize that fact. We should be ready for it. We should give careful thought to what we are going to be called upon to do, so that when, as and if that time comes we shall be ready for it.

English Furniture Plants Are Now Making Aircraft Parts

There can be certain steps made, and I can assure you that the people who represent this industry in Washington are not going to allow any time to elapse without making that effort. We know, for instance (It is no military secret at the moment) that practically the entire English furniture production is now devoted to the manufacture of wooden aircraft. There is one particular type of plane—a very suc-

cessful fighter, twin-engined pursuit—that is being made on a subcontract basis in England by practically 100% of the wooden furniture manufacturers. We have suggested, and we hope it will be possible to arrange that our industry can profit by what the English furniture industry has done.

We are suggesting that a Commission of two or three (or possibly more if transportation is available) furniture manufacturers of this country be sent to England. Of course, they cannot go without the approval of our government. We are asking that that approval be granted. They are to make a first-hand study of what the British have done in converting their furniture industry to aircraft production.

Pool of Technical Information Would Help in Conversion

We are going to make another suggestion to our armed forces—that we in the industry be given engineering talent to form possibly a pool of technical information which will be available to the industry as a whole. We realize that today it is utterly impossible for every manufacturer, who wants to get into this work, to go out and build up his own engineering crew. Those engineers are not available, and the Government is frowning very severely, and correctly, upon the old proselyting system of procuring them. We hope that service will be available; that a compiled study will be made; that a handbook will be issued; so that when, as and if your plant and my plant are called upon to do this work, we will have something concrete before us to help meet these problems.

We have another plan in mind which we are going to present to the Army and to the Navy; and that is that instead of one manufacturer trying to do a job on his own, that possibly a pooling of manufacturers will have to be worked out. We will have to forget our petty jealousies, and the fact that we have all been competitors in the past, for after all, from now on it is barely possible that we are only going to have one customer, and certainly collectively we are going to have to satisfy that customer, or else this war is not going to be won.

Furniture Factories Not Suited to Aircraft Assembly

The WPB realizes the acuteness today of the material situation, and they are not building new plants unless it is absolutely necessary. Unfortunately, our present furniture plants do not lend themselves to the actual assembly of aircraft. You need wide large open spaces. After all, we are talking of aircraft now with wing spreads of 120-ft., fuselages of 64-ft. in length. It is going to be rather difficult to put those things into production if you have to dodge a forest of posts, with which most of our plants are equipped.

It is possible that in a certain locality six manufacturers, for instance, with probably a total floor area of 1,500,000 to 2,000,000-sq.ft of space, with all the machinery necessary for the production of wooden parts, might get together and form a pool. I am told in WPB that steps are being taken with the Attorney-General's Office, so that these pools can clear any possible conflictions with our anti-trust laws. After all, we all realize that they are going to be non-profitable, and only organized with the idea of furthering the war effort.

All of these manufacturers might

be grouped together, however, and we might build one assembly plant, which wouldn't cost too much money, and let each factory take a specific part of that plane—fabricate it in his plant, make tail-surfaces in one plant, stabilizers in another, wing panels and center sections in another, and so on—and let all of those parts flow into this one central assembly plant, and have that plant policed or captained by someone now in the aircraft industry, who would understand power plant installation, and those technical details with which we are not so familiar.

These plans, at the moment, are all very much in the air. We hope to have an opportunity of presenting them to the Army and Navy, and we hope it won't be very long—if they want our facilities—until we can come back to you and report something definite that you can do.

Frolics in the Finishing Room—10

THIS GOES to show how a mere joke, played on a spray operator using lacquer sealer, can cost the company a considerable loss of material and time. Something, of course, will often happen where younger finishers are on the job without close supervision and real discipline. Like children, they are likely to get into mischief, and they do not stop to think of the consequences.

A sprayer—a new man on the job—ran out of material and asked one of the other sprayers (a practical joker) how to mix some additional sealer, using lacquer thinner to bring the material to proper spraying viscosity. The other fellow, seeing an opportunity for a joke, gave him the wrong can of thinner—a can of benzine. He poured it in the sealer and stirred it up without even looking carefully. Then he started to spray. The benzine was the only material that came out of the gun nozzle until the congealed mass of solids in the sealer clogged both the hose and gun. This made an awful mess of things. It was necessary to clean the whole outfit, including the gun.

This practical joke killed one hour of good spraying time and, of course, it interrupted production at this spray station.

In these days of speeded-up war production a loss of this kind is serious in many ways. The foreman on the job, unless he can cover

it up to protect his operators, is the "fall guy" in the long run, and is likely to be called to account for letting such things happen.

If the operator that played the joke is fired as a penalty for his joke, it is up to the foreman to break in another sprayer, which involves more lost time and expense for the company. In summing up the results of such a joke, it is very costly to the company, regardless of which way it may have ended.—F. W. WORTH.

Sateen TUF-TEX
THE LIFETIME FINISH

Whether you are using lacquer or varnish, it will pay you to investigate Tuf-Tex. It will improve and speed up your varnish finish or lower the cost of your lacquer finish and still maintain quality. Free samples will be sent on request.

HERE ARE 8 OUTSTANDING TUF-TEX ADVANTAGES

1. Varnish Body and Economy.
2. Dust Free in 30 minutes — To Handle in 1 Hour.
3. Air Dries Overnight — Force Dries in 2 Hours.
4. Smooth, Satiny, Clear Rubbed Luster.
5. Rubs Clear — Non Graying or Blooming.
6. Hard — Mar Proof — Print Resistant.
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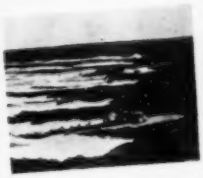

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LETTERING, STRIPING, DECALS, MASKING — ON *Trucks and Busses*

BY M. R. BENNETT

INASMUCH as our company does a considerable amount of custom work, we have a great deal of masking, lettering, striping and decalcomania work. All of this work requires highly skilled labor.

Our usual method of lettering includes a masking and spraying operation. The lettering is cut out of a special stencil paper which is extremely fine and non-porous. Our cut-out man is an expert, with many years of experience in this line. After the work is laid out, it is cut on a glass-top table. A very sharp stencil knife is used to produce smooth clean edges.

Use of Stencils for Letters

After the stencil is cut, the proper spaces on the bus or truck are carefully measured and lined off. A special sizing is then applied over the area where the lettering is to be placed. When this coating dries to the desired degree of tackiness, the stencil is put on. After making sure that the stencil is in the proper position, it is rolled tight with a small rubber roller. The letter ties are then cut. The exposed sizing is then brushed off from the open letters with a medium-stiff hand brush. This operation removes the undesirable exposed sizing and also insures tight adhesion of the stencil, which is very important. The lettering is then sprayed with the desired color, the workman using a small low-pressure touch-up gun. Care must be taken to avoid getting any spray mist over the finished product.

After the lettering has set up, the masking is removed. The sizing is then rubbed off with the palm of the hand. I might mention that the sizing is like a latex product; after drying, it rolls off easily under pressure.

This spraying of the letters gives us a perfectly smooth flow-out job and also clean-cut edges for the "edging" operation which follows. All of the "edging" around letters is done by experienced sign painters. By "edging" I mean the colored outline or shadowed edge around each letter.

Hand and Machine Striping

We do striping both by machine and by hand. Wherever practical we use a machine striper. However, because of moldings, streamlining effects, rivet heads, different widths of stripe, etc., we must keep a crew of skilled hand stripers at work all of the time.

Our fire trucks generally call for a gold leaf stripe or scroll work. The job is first laid out. Then sizing, the width of the desired stripe, is applied. When this reaches the desired tacky stage the gold leaf is put on. This leaf is then trimmed

See another article on Trucks and Busses by this author, in May issue.

to the width of the stripe, after which the gold leaf is varnished with a clear synthetic varnish to protect it from the weather. The varnish is carefully brushed on by hand.

We also do some decalcomania work. We use both the water and sizing type of decals.

How We Use Decals

The decal application is comparatively simple. Care must be taken, though, to carefully center and measure the space where the decal is to be applied. The water decal is immersed in warm water for 30 seconds to one minute. It is put on the product face down. Then the heavy paper backing is taken off. The transfer can either be patted down by a soft sponge or rolled down with a rubber roller. When using the roller care must be taken to avoid applying too much pressure on the transfer, or it will slide off center, thus spoiling the article being worked on.

Personally, I prefer the sizing type of transfer because I believe you can get a better bond between the paint and transfer. Also, you run less risk of having it slide off center. For this type of decal you can use a special cement made for decals. I have found this to be very good. The decal is laid out flat, face side up. A thin coat of size is then applied over it. Care must be taken to apply a thin even coat. Otherwise the transfer will be just right for application in some spots, and too wet in others.

When this sizing becomes tacky the decal is picked up by the corners and centered on the previously measured position. The decal is now rolled flat with either a rubber roller or a round-edged squeegee. It is best to work from the center outward. This presses out any air pockets that may be under the decal. The heavy paper backing is then peeled off. This does not require any previous soaking or wetting. After the heavy back paper is off, a thin tissue-like cover remains over the decal; this tissue is rolled to smooth out the decal and to prevent any possibility of wrinkles. The tissue paper is soaked off with a clean sponge and water.

The exposed decal is then patted dry with a soft cloth and immediately washed with a damp cloth or sponge containing naphtha, mineral spirits, or benzine. This last operation removes all traces of the sizing. After drying, the decal is ready for the clear varnish or lacquer. Care must be taken to allow sufficient time for the decalcomania to dry thoroughly; otherwise it will wrinkle upon application of the clear coat which it must have to protect it.

Use of Masking Tape

I will only touch briefly on masking and masking tape, as each paint shop has its individual masking problems which are more easily solved when one has first hand information regarding the number of coats of material, shape of areas to be masked, time allowed for the job, etc. The only information I might add is to use a good grade of tape. I have noticed advertisements of dependable industrial tape in past issues of this magazine.

I prefer the paper backed tape to the cloth backed, because I believe it leaves a sharper, smoother edge. Be sure the back is non-absorbing. Always be sure the tape is rolled tight. Never put the tape on a warm surface or on one that is not thoroughly dry, because you will cause the paint material to print. Sometimes, if the enamel is not dry, it will stick to the tape and peel off when the tape is removed.

Never store the tape in a damp or overheated room, as this causes deterioration of the gum. It must be remembered, too, that you can buy tape in practically any width desired, so always use the proper width and avoid waste. It is always a good practice to spray "away from the tape edges", as this will give a smoother edge. Some concerns also use the extremely wide tape for stencil and design work.

Easier Cleaning of Spray Booths

UPON making several trips to various plants, I have noticed that all of them still use the old method of trying to keep the spray booth clean—that is, by using soap, oils, or heavy greases and, in some cases, old wrapping paper with heavy grease to hold the paper in place. These old methods require a lot of time to clean the booths properly. Also, the actual cleaning can only be done by scraping. Our time is valuable these days, so we must save as much of it as possible.

I have used the following method for several years and find it satisfactory in every respect: We use a special spray-booth compound to prevent paint from sticking to our booths. It has several advantages. We can clean a spray booth the size of 8x8x20-ft. in about 30 minutes, making it as clean as a pin—that is, as clean as the day it was installed. There will be no paint hanging around in the corners and places where a scraper cannot reach.

The compound, as purchased, is a white powder. It is mixed with water and is very cheap to use. It can be applied by various methods; for example, by using a large paste brush or push broom, or by pressure pot and spray gun. The latter method is the best, although it has one drawback. The water in the compound will rust the parts in the spray gun unless the gun is thoroughly cleaned immediately after spraying this material.

However, it also has another advantage. It gives excellent lighting effects. We use it on our concrete floors, where we do not want the paint to stick.

Somebody is going to ask: "Can this kind of powder compound be used on the ceiling of the spray booth and not fall on flat work?" This may happen, but during all the years we have been using this spray-booth coating, it has given us no trouble like that.

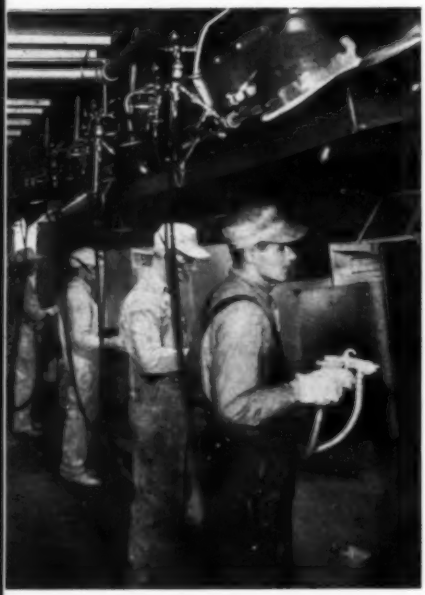
The actual cleaning of the coated spray booth can be accomplished to the best advantage by using a small garden hose attached to a water line, which every paint shop generally has. You can use wooden scrapers if no water is available. By using the wooden scrapers you also cut down the fire hazard (wood against metal makes no spark) and the wood will work as well as metal if you should have to scrape the booth. You will find that the cleaning can be done much more quickly this way than any other way.

I believe there are several companies who make such a compound, but I can furnish the name of the company who makes the product we use, upon request.—S. L. S.

Expands Laboratory Facilities

Increasing laboratory space by more than 50% in the past year, Foster D. Snell, Inc., 305 Washington St., Brooklyn, N. Y., have added substantially to their facilities for rendering consulting and research services. Present plans call for another laboratory outside of New York in the near future devoted to furniture finishes.

Accurate Cost Control in



BY NORBERT F. SCHROEDER
Hamilton Manufacturing Company

Fig. 1 (Opposite page)—Metal cleaning and degreasing unit in operation.

Fig. 2—Sprayers at work where overhead conveyor line moves manufactured items through a section of water-wash booths.

IN AN earlier article (Dec. 1941) on cost control, I outlined several suggestions for records control or paper work, essential in maintaining records of performance for various purposes.

Records are of little or no value without actual control on the job. Possibly, no other division of manufacturing requires as much detail attention as the finishing room, to obtain performance somewhere near perfection.

To obtain proper costs and quality production in any finishing room, a good foundation is of primary importance. In finishing metal furniture, for example, the cleaning of the metal, removing grease, oil and factory film must be given careful attention.

Vapor Degreaser; Conveyor Air Conditioned Spray Room

In one factory producing metal furniture, the cabinets moving up off the assembly line are put down into a vapor degreaser on an automatic carriage. The time required to properly clean a unit is determined by the weight of the cabinet and the time necessary to bring the vapor level above the top of the unit. As condensation takes place the carriage automatically raises the cabinet to the top, at work-table level, as shown in Fig. 1. The automatic carriage on the de-

the Finishing Room—II

greaser, operated by a timer, gives exactly the same cleaning cycle for each unit, thereby insuring thorough cleaning, and enabling the operator to prepare the next unit.

From the degreaser the unit is moved onto a work table where all surfaces are completely tack wiped with a specially treated tack-rag. The tack-rag removes all lint and dust set up on the metal.

From the work table the unit is placed on a continuous overhead conveyor and transferred into the finishing room.

The conveyor chain speed, of course, is determined by the size of the unit and the area of surface to be sprayed. A variable-speed drive conveyor motor provides chain speeds of from 4 to 12-ft. per minute, producing from 40 to 100 units per hour, depending on size.

The finishing department includes a modern, air-conditioned spray room with an intake of air of 65,000-c.f.m. and an exhaust of only 60,000-c.f.m.; therefore, the room is under constant pressure, which produces ideal working conditions and eliminates any possibility of dirt through doors or oven openings.

Primer Coat; Baking; Sanding; Inspection

The units pass through the first of two 30-ft. water-wash spray booths where four operators apply the first coat of high bake primer shown in Fig. 2. The primer coat

is applied at 1.0 mill film thickness on all important surfaces and .75 mills on backs and bottoms.

From the primer booth the units are moved, on the conveyor, into the first of two indirect-fired convection-type baking ovens, shown in Fig. 3, where the primer is given a 40-minute bake at 400° F. or its equivalent.

Out of the primer oven the cabinets pass through the sanding section, shown in Fig. 4, where each unit is carefully sanded and inspected before being moved into the top-coat booth. The sanding section is responsible for rejects and all first-coat inspection. When the sander rejects a unit for any defect he merely turns the unit back and rings a bell to advise the repair man in an adjacent room that a unit has been rejected.

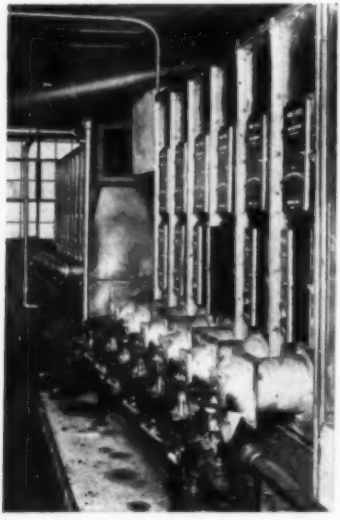


Fig. 3—Battery of oil-fired heaters which supply heat for two enamel-baking ovens.

Before the rejected unit reaches the top-coat booth the repair man has moved in a repaired unit and placed it on the chain in place of the rejected unit. The repair man always has five units repaired in advance to take care of rejects.

This procedure provides a full chain at all times through the top coat booth, eliminates trucking back from final inspection and provides maximum production. This might appear to be an insignificant item at first glance, but when one considers that an average finishing room has a reject factor of approximately 3%, it means a top coat production loss of 3%, as well as an additional 3% direct labor charge. If you will compute this over a period of a year you will find that it buys a lot of paint.

Top Coat Thickness; Final Inspection

The top coat is a high-bake synthetic enamel applied by four operators at a 1.0 mill film thickness on all surfaces. The top coat is baked at 300° F. for 60 minutes, or its equivalent.

Cabinets pass from the top coat oven through a 100-ft. cooling area and are given final careful inspection. The final inspection includes film thickness, with the latest type film gauge, color, dirt, sags, drawer and door fitting. No unit passes inspection until it meets rigid specifications on all of these requirements. From the inspection line the unit is removed to a roller conveyor, shown in Fig. 5, where it is packed, stenciled and conveyed again to the warehouse or direct to the railroad car being loaded.

Of course, to obtain quality production that meets with the rigid inspection requirements, much preliminary work must be done before applying the finish.

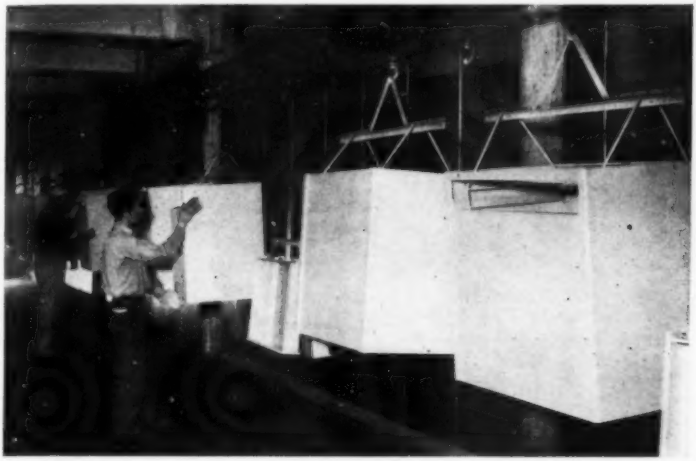


Fig. 4—Hand sanding between coats, as the products move along slowly by conveyor. Notice the type of hooks and supporting racks which temporarily connect the products to short swiveled hooks attached to the overhead chain conveyor.

Finishing materials are purchased in carload shipments and stored in a specially built paint storeroom. This storeroom, with a constant year around temperature, contains many drum racks, shown in Fig. 6, provided for most economical and efficient handling. Just across the aisle from the drum racks is a series of paint-circulating tanks. These circulating tanks, of which there are two for each color, are provided with agitators and specially designed pumps for delivery of the paint through 500-ft. of pipe to the various finishing departments.

The paint is thoroughly strained as it is poured into the tanks. For convenient handling of the drums at the mixing tanks an overhead conveyor hoist is provided. While paint is being sprayed from one tank, the other tank is being charged.

One man is in charge of the paint-mixing room at all times. He charges the tanks, measures the material each morning and night, and at each model change-over, for accurate consumption records, and makes two viscosity readings each 4-hour shift. The paint-mixing room is kept at 90° F. winter and summer. Paint is pumped through the pipe lines, over a street and into the finishing rooms. A steam-heated jacket is provided around the pipe lines to insure constant temperature in the line across the street passage.

Close Control of Spraying

The temperature of the material at the guns is maintained at between 76 and 78° F. at all times. Another viscosity reading is made at the gun every 4-hour shift.

Up to this point it is rather simple to standardize because of

the many mechanical controls which almost entirely eliminate the human element. However, maintaining control requires constant checking and double checking at the spray gun.

Each morning the foreman checks the fluid and air pressures of every operator's station. Since only one adjusting key is available in the department, only the foreman can make adjustments. With all other conditions normal, a fluid pressure of 7-lbs. is maintained on the primer guns 1 and 2, and 8½-lbs. on guns 3 and 4. These pressures were arrived at after painstaking experiments and analysis. The top-coat stations maintain a fluid pressure of 10-lbs. throughout, because every operator sprays the same film.

Air pressures, or atomization pressures, vary with the type of surface, design of unit, spray gun spreader-adjustment, amount of cutting-in, and other factors. The air pressures on the primer guns 1 and 2 are 50-lbs.; on guns 3 and 4, 55-lbs. On the top-coat guns 1 and 2, the air pressures are 60-lbs. and on guns 3 and 4, 65-lbs. These pressures, of course, are not recommended as standard practice, but are arrived at to most efficiently comply with a given job.

Spreader-adjustment of the spray gun is very important, as has been observed in many finishing departments where 10% to 25% of the material is blown out of the stack because too many spraymen just like to work with a wide "fan" so they can make fewer passes across

Fig. 5—In the packaging department where finished products are prepared for shipment.

Fig. 6—Drums of material are stacked in racks like this in the paint store room.

the work. Overcoming this little personal preference requires patience and definite education on the part of supervision.

One last important control is temperature in the sprayroom. Besides providing ideal working conditions, a constant temperature of from 66 to 70° F. will permit best handling of most thinners used in synthetic materials. An experienced sprayman knows the effect of cold on slow thinners and heat on fast thinners.

Chemical Lighting for Blackout

WALLS AND ceilings of cold "firefly light," made possible by newly developed phosphorescent chemicals, can now provide emergency lighting for ships, air-raid shelters and vital public buildings, according to E. W. Beggs, Westinghouse lighting engineer, East Pittsburgh, Penna. Chemical lighting, developed for blackouts and power failures, has proved, in laboratory tests, to be sufficient for all ordinary movement in a darkened room; and, in many cases, one can distinguish objects and even read a watch by this light.

An instantaneous flash of bright light, like that from a photoflash lamp, is sufficient to charge up a phosphor-coated wall for as long as eight or nine hours. These phosphors, which generally emit a green or blue illumination, act like storage batteries, soaking up a great quantity of light and then releasing it slowly. A wall 15-ft. long and 10-ft. high, for example, would radiate about 7½ lumens of light. An ordinary 25-watt lamp gives off 260 lumens by comparison.

When a bright light is played on a phosphorescent material, microscopic light particles are showered into a mass of tightly packed phosphor atoms. Each of these atoms has electrons spinning around it like tiny satellites. Light particles, which score "hits" on phosphor atoms, destroy the natural order and send the satellite electrons spinning out of their orbit. In returning to their normal position, million of these electrons create flashes of illumination which light up the material in some cases over a period of hours. Fluorescence, generated by ultra-violet rays, works in the same manner except that the action of the electrons ceases when the ultra-violet is removed and the glow of light disappears instantly.

The Milburn Co. of Detroit Changes Address

The Milburn Co. of Detroit, Mich., formerly located at 905 Henry St., announces removal of its offices and plant to a new location—3246 E. Woodbridge Ave. The object of this move is to enlarge the company's capacity and provide more modern manufacturing facilities. The company's products include Ply products for skin protection in industry, and Ply-Rustex for positive rust-proofing.

FINISHING *Plywood Aircraft*

BY H. C. LEWIS

What preliminary treatments to use to make new plywood surfaces moisture resistant, followed by primer - surfacer and the finish top coats of lacquer or synthetic enamel. Included also is a suggested schedule for fabric - covered plywood surfaces for aircraft.

PLYWOOD is definitely on the way back as a skin for aircraft fuselages and wings. There are two reasons for this. First, the shortage of aluminum due to the tremendous expansion in aircraft production. Second, the vast improvement in adhesives used in laminating the wood. The adhesives now used are waterproof, fire-resisting and definitely increase the strength of the structure.

A contributing reason is the improved methods which have been developed for molding the plywood to the desired form, and the speed and economy with which this operation can be performed. In order to conserve the supply of aluminum, duralumin will very likely be reserved for combat ships and plywood will be used for training planes.

The finishing of plywood for military purposes involves waterproofing both inner and outer surfaces in order to prevent distortion and added weight from water-absorption—as well as to prevent the growth of mildew or fungus in humid, tropical climates.

Use a Water-Resistant Synthetic Sealer Coat

For waterproofing purposes a clear sealer is recommended. This should be made from a water-resisting synthetic resin and be sufficiently thin in body to penetrate the wood readily, but high enough in solid content to efficiently seal the wood in not more than two coats. It should be of such a nature as to be capable of application by spray, brush, or dip, the method of application depending on the size and shape of the structure and the accessibility of the surface to be coated. One coat should be sufficient for close-grained wood and two coats for absorbent and open-grained wood. This sealer should dry to recoat in not more than two hours.

A synthetic primer-surfacer should then be applied to the exterior surfaces by brush or spray. The first coat of primer-surfacer should be applied by brush, working it well into the pores in order to avoid air pockets and pitting. The num-

Looking up at six army trainer planes in flight. (Associated Press Photograph).

ber of coats will depend on the nature of the wood; only enough should be applied to equalize the inequalities of the surface.

Surfacer and Enamel Coat

The surfacer should dry to recoat in not more than four hours and must be of a tough, elastic, non-shrinking nature—not a porous, brittle filler such as is used in furniture finishing. The surfacer should then be sanded smooth, care being taken to avoid cutting through the sealer.

Then follow with two coats of pigmented lacquer or synthetic enamel. If the plane or glider is for strictly training purposes, bright glossy finishes, such as are shown in Army Air Corps color card 3-1, may be used; but if a camouflage finish is desired, the unobstrusive lusterless shades in Air

Corps color card No. 41 are recommended.

The system just recommended is intended for application directly to the plywood. Some manufacturers have been using a sheath of cotton fabric over the plywood, but this may be eliminated in building military training planes, as the system of finishing the fabric-covered plywood ship requires a greater number of coats which increase the labor cost. In addition to this, the finishes involved are not the same as those applied directly to the wood and they involve the use of critically scarce solvents which, of course, completely evaporate.

Fabric-Covered Plywood

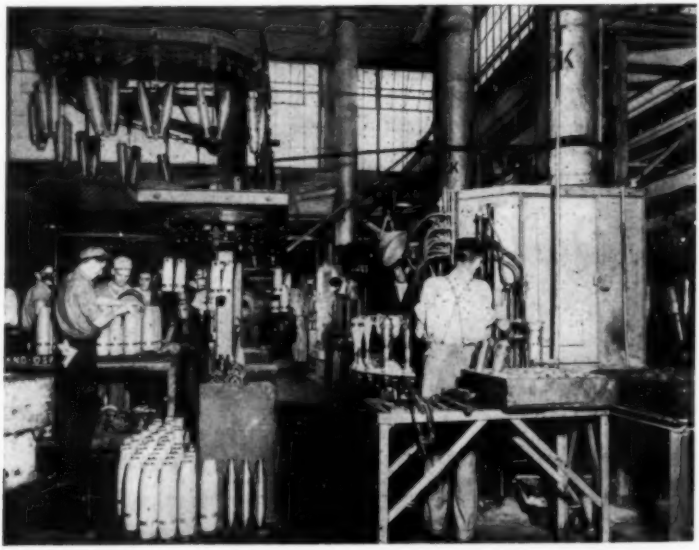
The system recommended for fabric-covered plywood is as follows:

1) Two coats of the same clear sealer, as recommended above, on both interior and exterior surfaces.

2) Two spray coats of clear cellulose nitrate dope, on the exterior only.

3) Apply the fabric.

4) One brush coat of heavily reduced clear cellulose nitrate dope. The dope should be reduced at least 50/50 with dope thinner so that this coat will soak through the fabric and soften the preceding coats



Automatic spray painting equipment continues to play a vital role in the general speedup of defense manufacture. Shown above is an interesting installation in a large plant that formerly made civilian products. This view, made in the shell shop, is of the general painting line for all shells turned out by the company. A row of rotary-type automatic spray machines for shells appears at the right, while the shell inspection bench is shown at the left. Photograph, courtesy of The DeVilbiss Co.

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of dope, thus causing the fabric to adhere tenaciously.

5) Two full-bodied spray coats of clear cellulose nitrate dope.

6) Sand smooth.

7) Two spray coats of pigmented dope, pigmented lacquer, or synthetic enamel in the shade and sheen desired.

These systems are intended to give adequate protection with the minimum number of coats and to produce a finish satisfactory to the armed forces from the standpoints of smoothness of finish and weight per ship.

Many furniture manufacturers are receiving contracts or sub-contracts for plywood parts or sub-assemblies and are, perhaps, not familiar with the requirements of the aircraft industry. It is suggested that they purchase all coats from the same manufacturer in order to insure each coat being compatible with the preceding one. It would be well, also, to arrange to have the paint manufacturer furnish a capable service man to supervise the initial production in order that he may make any adjustments in the system that may be required to meet individual shop conditions or requirements.

Tank Made of Scrap

The accompanying picture is an interesting example of how a need can be met despite material shortages. This shows a plating tank which our maintenance department welded up from 56 pieces of scrap steel.

When they could not buy the needed tank nor the necessary materials from which to make it, they made use of scrap steel gathered from various departments. Some

Made from scrap and just as good as a new one.

of these pieces are as small as 4-in. square. The entire tank, which incidentally is the second of its kind they have made, is made from scrap.

This tank and the other one like it help keep production rolling on defense items which we are manufacturing.—UNION STEEL PRODUCTS CO.

"Keep Up the Homes We're Fighting for"

Launching of the home furnishings industry's most aggressive publicity effort in history—a wartime campaign built around the theme "Keep Up the Homes We're Fighting For" and emphasizing the importance to civilian morale of well-furnished homes — is announced by the Home Furnishings Industry Committee through Leonard W. Stratton, national chairman.

In preparation since America's entry into the war, the campaign already has the approval of leaders in all branches of the industry and will soon be in full operation, Mr. Stratton said. It calls for close teamwork between manufacturers, salesmen, retailers and all others interested in any phase of home furnishings production or distribution.

"Right now, while automobiles sales have been discontinued and many other commodities are no longer available, and while the tire shortage will keep more people at home more of the time, we in the home furnishings business have a golden opportunity to make the consumer more conscious of the values we have to offer," he declared. "It is an opportunity which may not soon present itself again and we are determined it will not be muffed."

LET US HELP YOU WITH GOVERNMENT SPECIFICATION

Years of experience in serving Industrial paint users found Lowe Brothers factory and field organization well prepared for our present wartime service. We are supplying ***U. S. GOVERNMENT SPECIFICATION*** *finishes to makers of war weapons, supplies and materiel of every conceivable type.*

As a result we have available a vast amount of information regarding current formulations adopted by the Land, Sea and Air Branches of our Armed Forces.

If you are a contractor or sub-contractor of war supplies or materiel, Lowe Brothers intimate knowledge of wartime specifications plus our years of experience in serving—among others, the critical and exacting Machine Tool Industry—can be of great service to you in establishing efficient production schedules and accurately figuring unit costs.

And since we well realize that time is of the essence, your inquiries for bids or other data will receive our prompt attention.

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WARTIME FINISHES *for Industry*
IN ACCORDANCE WITH U. S. GOVERNMENT SPECIFICATION
AND MAINTENANCE PAINTS
TO MULTIPLY YOUR MAN POWER EFFICIENCY

Oils Used in Finishing Materials

BY WILLARD SEEMAN

Information about different oils used in the manufacture of finishing materials, their origin, characteristics, etc.

This article will interest you who ordinarily are concerned with the application rather than the formulation and manufacture of finishing materials, as you will want to know more about the various lacquers, enamels, varnishes, etc., with which you work.

AMONG the ingredients employed in the manufacture of finishing materials of various kinds, the oils enjoy a position of considerable importance from a standpoint of both history and usefulness. Recorded history shows that the properties of some of the oils used today were recognized more than 1,000 years ago. Later records indicate that materials very similar to our modern varnishes, in the use of oils as one of the ingredients, were made at least 500 years ago. That the oils are important and widely used today is attested by the fact that the annual consumption of oils averages more than 500,000,000-lbs., and at times has reached near the tremendous figure of 1,000,000,000-lbs. per year.

Sources of Oils

Most of the oils used in the finishing industry are of natural origin; that is, they are not prepared by chemical synthesis, as are some of the resins found in finishing materials. There are two main sources, namely, plants, trees, etc., and animals. Oils from trees and plants are broadly referred to as vegetable oils and, on a percentage of use basis, they are by far the more important. Included in this group are linseed oil, soy bean oil, tung oil, perilla oil, etc.

Animal oils come mainly from fish such as herring, sardine, menhaden, etc. While used in smaller amounts than the vegetable oils, they are finding increasing favor, as methods for their processing are developed. Some small amount of oil from warm-blooded animals has been used but the quantity is small and not of much importance.

Table I lists the names and sources of some of the oils used in making finishing materials.

Now we're ready with the answers to your conversion problems

As you probably have discovered, Government Specifications for finishes have been drawn with little regard for differing requirements of various methods of application. Obviously, coatings specified for spray can't be roller coated, nor an air-dry formula used for baking. It is the job of an expert to take these Government Specifications and adapt them to practical requirements.

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Our laboratories, our background, and our experience have enabled us to do this job intelligently and to your advantage. We now have formulas which meet Government Specifications, but are engineered to specific shop conditions and methods of application.

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TABLE 1—NAMES AND SOURCES OF OILS

COMMON NAME	OTHER NAMES	SOURCE
Castor oil	ricinus oil	seeds of castor oil plant (Ricinus communis)
Corn oil	maize oil	germ of common corn (Zea mais)
Cottonseed oil	oleum gosaypii seminis seed oil	seed of cotton shrub (Gossypium herbaceum)
Fish oils		
1) Herring oil		herring (Clupea harengus)
2) Menhaden oil	brenroot oil mossbunker oil	menhaden, a species of herring
3) Sardine oil	japan fish oil	sardines or pilchard (Clupea pilchardus)
Hempseed oil	hemp oil	seeds of hemp plant (cannabis sativa)
Linseed oil	flaxseed oil oleum lini	seeds of flax plant (Linum usitatissimum)
Oiticica oil		fruit of Licannia rigida
Olive oil	florence oil oleum olivae	fruit of tree Olea europaea
Peanut oil	arachis oil earth-nut oil	fruit of peanut plant (Arachis hypogaea)
Perilla oil		seeds of Perilla ocimoides
Rapeseed oil	colza oil rape oil	seeds of rape plant (Brassica napus)
Soya bean oil	Chinese bean oil soy oil	soya beans (Soja hispida)
Sunflower oil		seeds of plant Helianthus annuus
Tung oil	china wood oil nut oil	seeds of Aleurites cordata

Classification of Oils

While oils may be classified in a number of ways, the most important classification is based on their ability to dry. There are two main groups—drying oils and semi-drying oils. As the names imply, the former group includes those oils that dry readily to hard tough films, while the latter group numbers the oils which, though of value as finishing material ingredients, do not possess as good drying properties as the drying oils. The drying oils are, in general, oils from both animal (fish) and vegetable origin. The semi-drying oils are mainly those of vegetable origin.

In connection with the degree of drying exhibited by various oils, a chemical test is used by means of

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Factory—Bahway, N. J.

which oils may be graded. The test is based on the weight of iodine which will combine with a given weight of a particular oil. The greater the amount of iodine required by an oil, the greater the ability of that oil to dry. The iodine numbers of some oils are given in the last column of Table 2.

Processing of Oils

The oils available in the early days of modern finishing material manufacture were few and almost entirely of the raw variety. Processing was limited, including only such simple measures as filtering to remove insoluble contanimants, and long storage to allow settling of undesirable materials. However, as the finishing industry progressed, there came demands for greater purity and uniformity, for the elimination of some of the less desirable characteristics of raw oils, and even for properties in the oils not possessed by them in the raw state.

As a result of these demands, processes were developed by means of which oils of specific properties and characteristics can be produced for almost every requirement where an oil could possibly be used. For example, oils are: 1) bleached to improve their color for use in clear and light-colored finishing materials; 2) chilled to remove waxy constituents; 3) heated to increase their "body" or viscosity; 4) treated with alkali to remove fatty contaminants and produce a neutral oil; 5) blown with oxygen or air to cause partial oxidation and an increase in body; 6) refined with acid to produce good pigment grinding characteristics; 7) mixed with driers to cause more rapid oxidation.

These and other physical and chemical treatments are employed in the modern oil industry, singly and in combination, depending on what is desired. Purity and uniformity are assured. The old original oils are modified to produce new and desirable characteristics. Newer oils, previously not particularly useful because of certain properties, are changed into valuable materials.

Uses of Oils in Finishing Materials

In the finishing industry, oils are used either directly or as a raw material in the manufacture of resinous materials. When employed directly they may be the principal vehicle, as in the case of linseed oil architectural paints, or they may be used in relatively small quantities as modifiers, as in the case of castor oil which is added to nitrocellulose lacquers for plasticising purposes.

When used as a raw material in the manufacture of resinous materials, oils are mixed with various gums and resins and other materials and then "cooked". The results of this procedure are resins entirely different from any of the original materials and extremely useful because their properties cannot be duplicated by any simple mixture of oils and/or resins. Varnishes are made by this process of heating oils and resins together.

While an appreciable portion of the oils produced go into finishing materials of various kinds, there are also other important uses. Tung oil, cottonseed oil, linseed oil and peanut oil are employed in making soaps. Many of the oils are edible and are used as food, particularly fish oils, cottonseed oil and, in China, tung oil. Castor oil and fish oils are used in medicine and various pharmaceutical preparations.

Giant Searchlights

(AND OTHER IMPLEMENTS OF WAR)

are finished with

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Manufacturers engaged in war work are finding Murphy Protective Coatings just what their products need — *and just what their plants need for fast, trouble-free production.*

This is nothing new to us — for we've been meeting the finishing requirements of innumerable peace-time products for more than 75 years. The *specialized* knowledge we've gained may very well help you solve *your* finishing problem—whether it's due to war work, or restrictions on the type of finish you have been using for normal production.

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TABLE 2—CHARACTERISTICS OF OILS

OIL	COLOR	SPECIFIC GRAVITY	IODINE NUMBER
Castor oil	yellow, yellowish brown	.960-.970	85
Corn oil	pale yellow	.920-.925	111-123
Cottonseed oil	pale yellow, yellowish brown, dark red	.922-.930	105-114
Fish oils			
1) Herring oil	pale yellow, dark red	.926-.932	130-142
2) Menhaden oil	yellowish brown, reddish brown	.927-.933	139-180
3) Sardine oil	amber, greenish brown	.928-.993	181-193
Hempseed oil	light green	.926-.928	145-161
Linseed oil	golden yellow, amber, brown	.933-.936	170-188
Olive oil	pale yellow, greenish	.910-.918	77- 88
Peanut oil	pale yellow	.916-.922	88-101
Perilla oil	light yellow	.932-.945	187-202
Rapeseed oil	pale yellow, dark brown	.913-.917	95-105
Soya Bean oil	pale yellow	.922-.928	137-143
Sunflower oil	pale yellow	.924-.926	125
Tung oil	yellow	.936-.943	150-165

These and other oils are used in making phonograph records and plastic composition; also in curing leathers, as lubricants, in tanning leather, as illuminants, in processing textiles, as food flavoring, in making butter substitutes.

It is very probable that oils will play an increasingly important role in the finishing industry, now that our country is at war. Many natural resins are imported. Many of the facilities for making synthetic resins will be changed to make war materials. It is obvious, therefore, that the day may come soon when we will be using finishing materials based on oils—some finishing materials, at least. Methods for using such finishing materials will, of course, be different from those we have been accustomed to use. However, there need not be any particular worry about the quality of our finishes. Oil finishes have excellent characteristics. They have been used successfully for a great many years.

Government Specification Finishes

A booklet on U. S. Government Specification Finishes has been published by Maas & Waldstein Co., makers of industrial finishes, Newark, N. J. The booklet provides makers of armament products with essential information on M&W finishes that have been made to conform with various U. S. Government specifications. Copies will be sent, on request, to engineers, purchasing agents, and executives.

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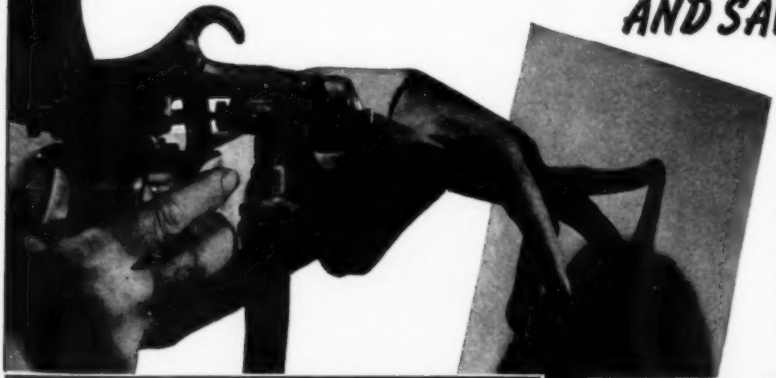
· Speed-up hints on wartime fini

1. PROPER HANDLING OF GUN SPEEDS FI AND SAVE MA



▶ be mar
pa as a lo
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INCORRECT... too far away, *causing fog or mist, which wastes finishing materials.*

INCORRECT ... too close, *causing uneven coat and air ripples, resulting in rejects.*

2. DISTANCE GUN IS HELD FROM OBJECT

▶ It is important that gun is held at the same distance during *entire* stroke. The correct distance is just about 8" from spray nozzle to surface of object—just about the span of thumb to little finger, as shown in top illustration.

3. ANGLE OF N TO

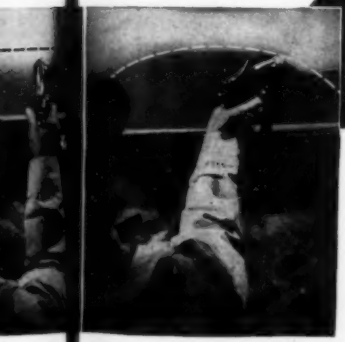
(*left*) **CORRECT**... gu pendicu *stroke.*

(*right*) **INCORRECT**... g pped so *at one end of* tern, l *streaks, sags and* The arc- *terials because th* is ither t *during most of* t

e finishing...*from the Du Pont Man* •

PEED FINISHING AVES MATERIALS

▶ he man behind the spray g as a lot to do with speed- i finishing operations and s g vital materials today. H eserves careful coaching i dling of the gun for peak e ency, maximum coverage a minimum waste. But he a deserves the time to do h ob right . . . not being r d too much.



E OF N TO OBJECT

T . . . gu pendicular *to surface for entire*

ECT . . . g pped *so it supplies more material end of s ttern, less at the other, causing sags and* The arc-shaped stroke wastes ma- *ecause th* either too far away *or* too close *most of s*

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▶ The Du Pont man shows you how to control each factor to speed up finishing processes and lower spray painting costs. In a handy pocket-size booklet he gives you 16 pages of valuable pointers for wartime conditions. Plenty of pictures. Get your copy now. Write to: E. I. du Pont de Nemours & Co. (Inc.), Room 7154-J, Du Pont Bldg., Wilmington, Del.

1. Temperature of paint
2. Viscosity of paint
3. Air and fluid pressures
4. Adjustment of spray gun
5. Handling of spray gun
6. Triggering of the gun
7. System in the strokes
8. Uniformity of coating
9. Thickness of film
10. Causes of rejects
11. Touch-up procedure

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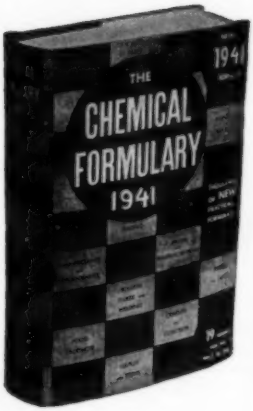
VOL. V



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INDUSTRIAL FINISHING *Magazine*

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WE CUT 21 HOURS FROM THE SCHEDULE FOR

Painting Aircraft Pumps

BY HOWARD DEAN

WAR production in industry today means "all out." Any new methods and ideas that can be devised or combined to speed up production and improve the quality of war products and accessories should be highly encouraged.

Many finishing specifications, set up by the government, can be adhered to and still be made more productive, with the idea of obtaining a more lasting finish, with less rejects from the inspection department.

Today the finishing foreman on war production can test his ingenuity and patience to no end, but it is a necessity. Our Government expects every man to do his duty and we should welcome the opportunity to contribute our share and more.

Here is an example: A job that came to me some time ago included a pump for an airplane fuel system. It is a pretty tough job to machine. The casting is made of aluminum which is anodized* after the machine work is completed. It has four threaded inlet and outlet openings which no enamel is allowed to touch.

Government specifications called for an air-dry, black, heat-resistant enamel, two coats. Previous to our contract, the company making these pumps had been plugging the holes with paper plugs, then hand cleaning the surfaces by brushing them with naphtha or lacquer thinner. This method, at its best, gives an inferior job of cleaning on aluminum castings. It does not remove the machine oil from the pores of the metal and, as a result, it leaves more or less of a greasy film on the surfaces to be painted.

The pumps were then sprayed with enamel and left to dry 12 hours before recoating. After the second coat, another 12 hours of drying elapsed before inspection and assembly. During assembly work the enamel coating was often fractured or damaged, because of inferior adhesion of the coating to the metal. These damaged places had to be touched up, which required additional time. This work was on a 24-hour schedule. We decided it was too slow.

Vapor-Degreasing; Baked Enamel Job

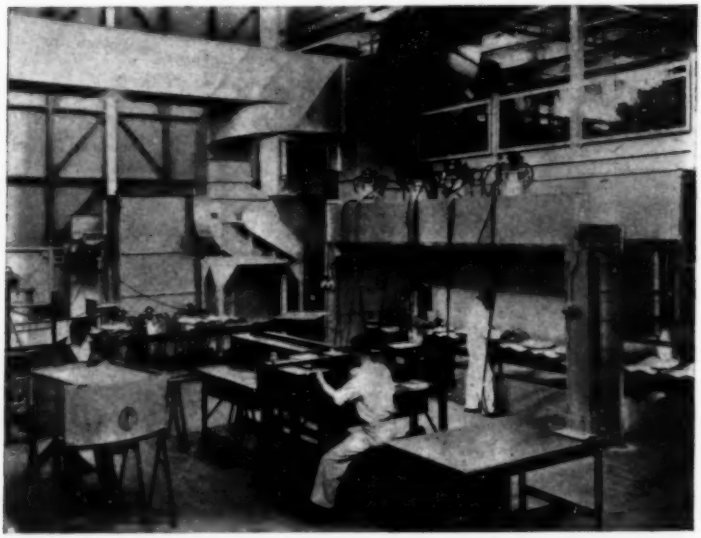
We wanted a cleaner job and we decided that vapor-degreasing the pumps would be the best way to really clean them in preparation for painting. We made brass tapered plugs for the threaded holes to insure a snug fit and thereby pre-

*An Electro-chemical process by which a thin oxide coating is applied to the aluminum surface to give better adhesion for paint, enamel, etc.

vent cleaning fluid or paint material from touching the threads. We degreased the pumps satisfactorily and then gave them a final blow-off with compressed air.

The test department informed us that, in service, the pumps heat up to as much as 250° F. or more, so we reasoned, why not bake the finish? Experiments showed that if the enamel was sprayed on and then allowed to air dry for 20 minutes, it would set up in a smooth even film, so the sudden oven heat wouldn't cause it to wrinkle during the first bake. The painted pumps could then be baked at 250° F. for 40 minutes. We recoated them while they were still warm and moved them right back into the oven at 250° F. where the enamel baked out hard in 40 minutes—ready for the final assembly work. At the inspection bench a shot of light oil was put inside each pump to prevent any rust that otherwise might accumulate there. Note: A steel rotor inside the pump could become rusty due to the very thorough cleaning inside the pump, as well as outside. Sometimes the pumps are placed in storage or shipped abroad as spare parts.

This method of cleaning the pumps, painting them and baking the enamel, cut 21 hours from the former painting schedule. We produced a better finish and eliminated rejects—at the same time using the specified paint material for the pumps and giving one day better service to Uncle Sam.



Clean intake air and an excellent exhaust system help to make real cleanliness possible in this corner of a modern product-finishing department where desk work goes on just back of a large water-wash spray booth. Photograph, courtesy of Binks Mfg. Co.

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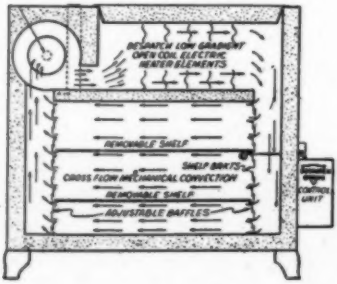
Small Forced Draft Ovens

The Despatch Oven Co., 722 Central Ave., Minneapolis, Minn., announces a new series of ovens available in 48 standard models, with temperature ranges up to 1250° F. The ovens are primarily designed for analytical laboratory work. They are also ideal for test baking and drying of paints, lacquers and varnishes, the drying of various solvents from compounds for aging, curing, for sterilizing instruments and glassware, and a multiplicity of other uses involving even small production heating and drying and baking work.

The accompanying diagram of the horizontal flow system shows the design features which provide such excellent oven performance. Air is forced through the heated open-coil elements by a large fan. Heated air is forced down the side wall duct to pass through the properly spaced ports and into the work chamber. Special baffles diffuse the heated air as it enters the work chamber to eliminate localized blast areas. The heated air moves smoothly in a horizontal flow through the oven. These ovens may be especially arranged with vertical air travel when necessary.

In the oven, suction of the fan pulls the heated air from the working chamber and then through recirculating ducts to the heating chamber, to be reheated and recirculated. A special exhaust stack with adjustable damper is provided to remove fumes and moisture-laden air. This enables conservation of the portion of the heated air that can be used for recirculation and accomplishes a definite saving of time and fuel.



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MATERIALS SUPPLIES EQUIPMENT

Gas heated ovens use a similar system for distributing and recirculating air. The products of combustion are mixed with fresh air and recirculated and forced into the heat duct and through the work chamber of the oven. This system permits the finest type of direct-fired gas heating for chemical laboratory ovens.

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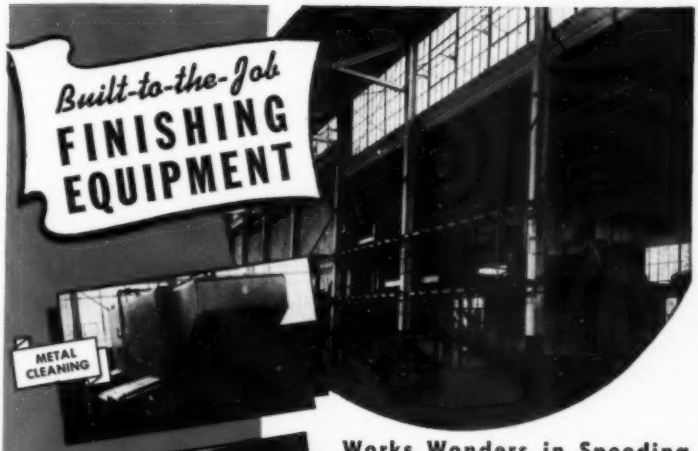
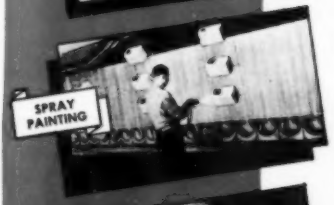
Plain and colored dry-adhesive labels for the identification or marking of various parts and products, including glass, containers and finished parts, are designed to stick to smooth highly-polished surfaces without harming those surfaces. They really stick and are not affected by extreme dryness or moisture in the atmosphere, or by excessive heat or low temperatures. However they can be easily peeled off when desired.

The labels may be had in any one of 48 different stock sizes and shapes available, from 5/16-in. diameter circle to a 2-in. round-cornered square. Labels are die-cut to any desired special shape up to 2-in. long. The label stock may be white, colored, metallic or transparent (cellophane). Where advisable, the adhesive is specially formulated to insure its adhesion to special surfaces. The stand-

Built-to-the-Job
FINISHING EQUIPMENT





Works Wonders in Speeding Up Finishing Production Lines

A strenuous effort to boost production schedules to constantly higher levels is sweeping all industry today. Those plants who fall short of their goal can usually trace their trouble to some "weak spot" in their production lines. In many cases the slowdown occurs in the FINISHING section — outmoded, inadequate equipment that simply cannot keep pace.

That is where a Mahon engineer can be of very definite help.

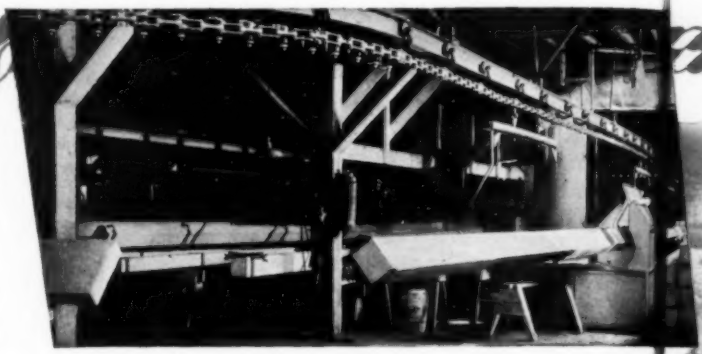
His knowledge of modern finishing methods and processes—his ability to embody that knowledge in practical finishing equipment—*plan it —build it—install it*—is working wonders in the "speed-up" of many war essentials.

If you are contemplating a change in your Finishing Equipment — let a Mahon engineer work with you in laying out a system that will be economical, dependable, and completely adapted to your specific requirements. Consultation is entirely without obligation.

THE R. C. MAHON COMPANY • DETROIT • CHICAGO

Manufacturers of Metal Cleaning Machines, Rust Proofing Machines, Hydro-Filter Spray Booths, Ovens of All Types, Filtered Air Supply Units, Hydro-Foam Dust Collectors—and Many Other Units of Special Production Equipment—including Complete Finishing Systems.

MAHON



BRIDGEHEAD

● Here's to the Corps of Engineers. They'll build a road, run a railway, or blow them up as required. At need, they'll drop their tools, grab their rifles, and fight as infantry. And as for building military bridges, they can throw one across a 230 ft. river in less than two hours.

For such a job their trucks carry flotillas of 10-ton metal pontons, tons of stakes, clamps, cables, hardware and heavy timbers. All this equipment has been carefully painted to protect it from weather, water and hard wear. Manufacturers, busy making the vast quantities the Corps now needs, use DeVilbiss Spray Systems to speed these painting operations and hasten delivery.

In fact, in the battle for all-out war production, DeVilbiss Spray Equipment is as versatile as the Engineers themselves. It's

Official U. S. Signal Corps Photo

cutting to a fraction the time consumed by obsolete methods for coating trucks, tanks, guns, planes, bombs, shell, battleships, and other materiel. Helping to GET 'em rolling—GET 'em flying—GET 'em fighting—on schedule or ahead of it.

Is your plant making something our armed forces need? Does it require painting or coating? Then modern DeVilbiss Spray Equipment can help you do that job better and faster—help you get your product more quickly into the hands of the men in uniform who are waiting for it.

THE DEVILBISS COMPANY • TOLEDO, OHIO

Canadian Plant: WINDSOR, ONTARIO

AIR BORNE DESTRUCTION CAN COME INSIDE TOO

Bombs that rain from the sky take a terrific toll in destroyed property and lost lives. So every device is being used to protect industry and keep the wheels of production turning smoothly and swiftly every hour day and night.

But, the enemy WITHOUT is not the only destructive force which must be eliminated. Dust—like enemy bombs—dangerous and destructive, but much more insidious in the way it attacks—is the air-borne menace that strikes from WITHIN. Dust ruins irreplaceable machinery, spoils materials in process and impairs workers' efficiency.

Hundreds of existing plants and practically all new war production plants are now equipped with AAF air filtration and dust control equipment. The need for a high degree of air cleanliness for product finishing operations is met by a complete line of AAF filters ranging in size from large automatic self-cleaning filters for finishing rooms to smaller unit filters for spray booths. Our engineering service is available without obligation. Write us for descriptive details.

AMERICAN AIR FILTER COMPANY, INC., 102 CENTRAL AVE, LOUISVILLE, KY.

IN CANADA: DARLING BROTHERS, LIMITED, MONTREAL, P. Q.

ard adhesive strength used on labels is best adapted to smooth, highly polished surfaces.

All Avery labels are unconditionally guaranteed for ten years against deterioration of the adhesive, regardless of what conditions of temperature or humidity they are exposed to. This broad guarantee is possible because the most extensive laboratory tests repeatedly demonstrate that even when one alternately applies temperatures or humidities so extreme that the label paper and printing are finally oxidized, the adhesive still remains impervious to change.

These labels are delivered on rolls of backing material from which they are readily peeled. The standard type of labels are produced with ungummed tabs for readily lifting the label from the backing material. The labels peel easily from this backing material which is chemically treated to maintain a very light hold on the adhesive. A continuous red line printed on the backing paper indicates the lifting edge of the label.

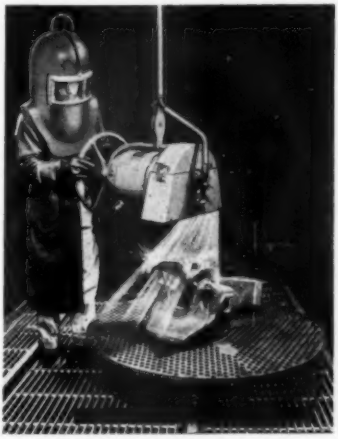
These "Kum Kleen" stickers are products of Avery Adhesives, 451 E. 3rd St., Los Angeles, Calif.

Portable Blast Cleaner for Castings

A Portable Wheelabrator for the blast room—an entirely new development in the field of airless abrasive blast cleaning is announced by American Foundry Equipment Co., 555 S. Byrkit St., Mishawaka, Ind.

Being airless, the new blast unit eliminates such equipment as: air compressor motors, pressure tanks, mixing chambers, air receivers, piping, hose, valves and nozzles.

It is claimed that the portable Wheelabrator has been successfully applied to the cleaning of a wide range of large and small intricate, irregular-shaped work such as that handled in jobbing shops or where the daily production of various parts does not warrant the use of special equipment. Typical applications would include



Portable blast cleaner in service.

such work as: lathe beds, flywheels, gears, pulleys, valves, car wheels, frames, housings, etc.

The portable Wheelabrator has complete flexibility of movement to any position—high or low—in any direction, and to any part of the blast room.

Literature describing the new portable Wheelabrator can be obtained by writing direct to the manufacturer.

Blackening Iron and Steel

Alrose Chemical Co., Providence, R. I., announces a new improved Jetal process for blackening iron and steel. The new Jetal colors ferrous metals a rich, deep, lustrous black and penetrates deeply beneath the surface. Only one bath is required. Another feature of the new Jetal is its ability to reduce friction on moving surfaces; friction is minimized.

The new material is patented and offers all the advantages of the original Jetal process extensively used throughout the world, plus the many additional features never before available. In

operation, the new process is simple as boiling an egg. It is an immersion bath requiring no current; colors ferrous metals by chemical oxidation. Work can be handled in bulk, in baskets, or barrels.

Alrose Chemical Co. will "Jetalize" samples upon request, or will arrange for free demonstrations of the process in the plants of those interested.

Removes Particles from Eyes

Mag-Optin, the new plastic eye particle remover, is a useful instrument to have in your first aid kit or medicine cabinet. It includes a small plastic magnifying disc which will not break when dropped. This magnifying disc will help you locate the eye particle. Then, instead of using a handkerchief to remove the particle, use the specially smoothened magnetized metal loop. If the eye particle happens to be metal the magnetized loop will attract it. If the particle is not metal, the wire loop can be used to dislodge and remove the particle. The instrument is a product of Allergy and Medical Products Co., P. O. Box 1399, Cincinnati, Ohio.

Camouflage Paints for Car Tops

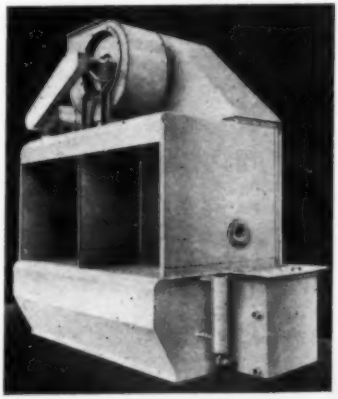
Operators of motor bus and transit lines will be faced with a new problem in connection with the maintenance of passenger comfort when they repaint their decks with olive-drab, in cooperation with the movement designed to prevent detection of major traffic arteries from the air. Aerial observers have pointed out that aluminum and other light colors in general use on tops would help guide enemy bombers toward important population centers and military objectives, particularly at night.

The new infra-red-reflecting camouflage paints recently developed by The Arco Co., Cleveland, Ohio, for protective concealment of vital defense structures and military equipment are particularly suited for use on public transportation vehicles under these emergency conditions. They are being produced in olive-drab and other camouflage colors which would ordinarily absorb heat and would normally put an additional load on the air-conditioning systems of busses having such equipment.

The Arco paints, identified as "Infray", are dull and hard to detect from the air, but have approximately the same heat-reflecting qualities as aluminum or other light and glossy finishes, commonly used in the interests of passenger comfort.

Hydro-Whirl Booth

Industries working with magnesium will be interested in learning about the further developments that have been made in the Hydro-Whirl Magnesium Booth. According to its manufacturer, Industrial Sheet Metal Works, Detroit, Mich., the factor of safety has been stepped up even beyond its former high efficiency, and the design also has been improved, on which patent has been issued.



The new hydro-whirl magnesium booth.

Like the "Jeeps"

Walker's Protective Coatings
Can Take It!

Formulated especially for war needs in finishes, Walker's Protective Coatings are tough and durable—they can take it! Regardless of your paint problem (and you'll have paint problems in connection with coating either war or civilian items), Walker can help you. Walker provides a dependable source of supply for all types of industrial finishes . . .

PRIMERS SURFACERS LACQUERS
SYNTHETICS WRINKLES

"Call on Walker"

H. V. WALKER CO.
Elizabeth, New Jersey
MODERN PRODUCTION FINISHES

Instead of being made of steel, the bench-high grating of the compartment where the work is done is made of hardwood, which will not produce sparks if struck with a grinding wheel or tool. Thus, the possibility of having sparks ignite the magnesium dust created by the grinding, buffing, or polishing operations performed within the booth is removed and danger of fire is practically eliminated. As an added protection against spark ignition, the booth sections are lined with Masonite.

An automatic control maintains the water level at a uniform height in the tank below the grating. Thus the tank will never run dry to endanger the safety of the operator.

Brush Cleaner

Cabot's Brush Cleaner, a product of Samuel Cabot, Inc., 141 Milk St., Boston, Mass., is a non-caustic liquid solvent manufactured especially for cleaning brushes and softening and removing old dried paint and varnish from them.

The chief merits of this brush cleaner are:

1) It is ready to use just as it comes from the can.

2) Will not evaporate.

3) Is non-inflammable.

4) Will not take the life out of the brush or injure the bristles or rubber settings.

5) Will salvage and renew any gummed-up paint, varnish, shellac, casein, kalsomine, coal tar, or asphalt-saturated brush.

6) Will clean any brush containing any fresh material, including lacquer.

7) After soaking the brush in brush cleaner, the brush can be rinsed with water, as the brush cleaner dissolves and completely washes out the paint.

8) Can be used to remove paint and to clean concrete floors.

9) Is economical to use as it is inexpensive, and very little is used with each brush.

10) Has a pleasant fresh odor and keeps away moths.

"Reziting" Preserves Wood Products

"Reziting", as developed by I. F. Laucks, Inc., (manufacturing chemists) Seattle, Wash., is a scientific treatment for wood surfaces to prevent grain raising, surface checking, entrance of moisture, warping, dimension changing, decay due to mold growth, etc. Rezite is a penetrating sealer which can be applied by dipping, brushing, spraying or roller coating.

The base of the material includes pentachlorphenol and various synthetic resins. It has no objectionable odor. Several variations of the material are available to suit various uses on the different woods. It acts as an excellent sealer or prime coat to be followed with staining and varnishing or lacquering, or with all clear coats, or coverage with paint. An 8-page folder gives complete information about this timely product which has long been used as a treatment for fir plywood. Write I. F. Laucks, Inc., at Seattle, Wash. (911 Western Ave.); or Chicago, Ill. (6 N. Michigan Blvd.); or Portsmouth, Va. (Commerce and Broad).

"A" Lustral Enamel

"A" Lustral Enamel has been reinstated by Sherwin-Williams Co. to fill the gap left by restrictions on Kem Lustral, which is now obtainable only on priority. "A" Lustral is suitable for either indoor or outdoor use, and brush, spray or dip application. It is being offered in the same range of colors as Kem Lustral, at slightly lower cost.

At the same time a new color card has been announced for "B" Lustral Enamel which is somewhat more economical than "A" Lustral but is recommended primarily for interior use.

Unless further restrictions are placed upon the paint industry, both "A" and "B" Lustral Enamel can be supplied on non-priority orders.

PIANOS AND PENCILS

Hardly relatives are the woods used in pianos and pencils. One must be beautifully grained for appearance — the other must be straight-grained for strength.

But one thing that is important to each is its finish — and there is a Nason Finish, perfected by Nason laboratory technicians, designed to enhance both the appearance and durability of pianos and pencils and the thousands of wood products in between.

Whether your product be wood or metal, whether its sales appeal lies in its appearance or in its durability, you can be sure there is a Nason Finish to improve it.

R. N. NASON & CO.
manufacturers
PAINTS · VARNISHES · LACQUERS

NASON *fine finishes*

151 POTRERO AVENUE, SAN FRANCISCO • 2201 BARRANCA STREET, LOS ANGELES

Safe Flooring Announced

The development of a new type of asphalt tile designed to prevent the accumulation of static electricity has been announced by the Building Materials Division of the Armstrong Cork Co., Lancaster, Penna.

The new material provides a surface condition which results in less than .1 meghom resistance to static electricity under certain specific conditions. An additional safety feature of this flooring is that no open flames are required during installation or repair work.

Because of these safety qualities, this conducive asphalt tile is especially suitable as a resilient flooring in arsenals, shell and bomb loading plants, powder plants, temporary field hospitals, and in various industries in which static electricity or the presence of an open flame at any time presents a safety hazard.

A low-cost flooring developed primarily for industrial use, this product is supplied in tile form so that individual units can be quickly and inexpensively replaced if accidentally damaged. Since the tiles are laid on a fast setting adhesive, the floor can be put into service immediately. Conductive asphalt tile is nonslip, nondusting, nonsparking, moisture-resistant, and odorless. In addition, it withstands fast trucking and is highly resistant to indentation.

Possessing high tensile strength and being comfortable underfoot, the tiles will not attract or sustain vermine and their matte finish prevents glare.

For Clear Lacquers and Shellacs

A corrosion-inhibiting additive for clear lacquers, nitrocellulose solutions, and alcoholic shellacs, which eliminates the need for shipping these materials in tin-lined drums, has been announced by the Merrimac Division of Monsanto Chemical Co., Everett, Mass.

The additive is a solution of an organo-phosphorus compound and is known as D. P. Solution. Used in lacquers in proportions of 0.1% to 1.0%, it has been found to give effective protection against corrosion of iron or steel under conditions met in the handling of lacquer shipments.

Its action is ascribed to the fact that it reacts with iron to form an insoluble film. Though of but microscopic thickness, this film is sufficient to afford protection to the surface and in case of breaks it is self-mending by virture of the very manner in which it is formed.

It is expected that the use of D. P. Solution will continue after the current tin shortage because it offers a cost advantage over tin-lining of drums even at pre-shortage prices. Two pounds of tin ordinarily are required to coat the interior of a single 55-gallon drum of the type used for industrial shipments of lacquers.

In addition to inhibiting corrosion, D. P. Solution has demonstrated interesting properties as a flocculating agent for maintaining good suspensions of the flatting agent in flat lacquers. The majority of lacquers contain sufficient flocculating agent introduced through the solvents, nitrocellulose of flatting agent itself, to prevent settling, but it has been found that this condition is assured in almost any lacquer when D. P. Solution is used.

Safety Defense Bulletin

Essential emergency safety equipment for plant protection and public safety departments is completely described in the new 8-page, fully illustrated Defense Bulletin just issued by Mine Safety Appliances Co., Braddock, Thomas and Meade St., Pittsburgh, Penna. This new bulletin covers the complete range of safety equipment needed during war-time conditions. Inside pages include descriptions of gas masks, helmets, gas detectors, inhalators, asbestos suits, goggles, respirators, first aid kits, Foille for burns, stretchers, splints and fire blankets.

In addition the bulletin introduces three new special items: the M. S. A. steel helmet, the M. S. A. defense first-aid belt and the M. S. A. combination traction splint.

BE READY FOR ANY EMERGENCY
With This
Complete Wood Finishing Schedule

● To furniture manufacturers facing restrictions on customary finishing materials, Glidden's new "SURFACENE-CLECO" Line offers a sure way to keep finishing operations up to present speed.

Six companion products that meet the requirements of any process or effect—designed to be used together for finest results—made entirely of non-critical materials whose availability is assured by Glidden's unlimited resources.

"SURFACENE" COMBINATION STAIN AND FILLER—combines these two operations, dries with superb clarity for sealing in 5 hours, cuts overall schedules 24 hours, saves handling costs.

"SURFACENE" PIGMENTED WIPING STAINS—producing the clarity of finest water stains.

"SURFACENE" GLAZES—for unequalled "plus tones" on any surface.

"CLECO" VARNISH SEALER—easy sanding in 2 hours, suited to either lacquer or varnish.

"CLECO" RUBBING AND POLISHING VARNISH—dries out of dust in 1 hour, ready overnight for recoating, or to rub in 36 hours.

"CLECO" FLAT VARNISHES—dry dust-free in 1 hour, hard overnight.

Investigate this complete "SURFACENE-CLECO" schedule that will free you from priority uncertainties, protect your production speed, and enhance the finished appearance of your line.

THE GLIDDEN COMPANY • National Headquarters, Cleveland, Ohio
Factories or Branches in Principal Cities

Is Plywood Surface-Treated?

I would like to know if plywood, as manufactured at the plywood plant, is ever given any surface treatment before being shipped or delivered to the manufacturer who purchases plywood for use in fabrication of products, such as furniture, truck bodies, aircraft, etc. It seems to me that some kind of surface treatment, such as the application of a penetrating sealer, would be desirable to make the plywood resistant to the entrance of moisture and to prevent objectional raising of the surface grain. It could be applied by spraying, roller coating, flow coating or even by dipping.

At the same time, of course, this penetrating sealer coat (or coats) should serve as an excellent bond for any subsequent coatings of paint, lacquer, wax, varnish, etc., which the customer may desire to add as a protective finish.—A. B. C.

There hasn't been a great deal of demand for surface treatment on hardwood plywood such as we manufacture. There is some birch plywood now being used in the Liberty cargo vessels and most of that is being furnished primed with one coat of white lead and oil. In the aircraft industry, occasionally we get orders for special parts which are finished with a sealer and spar varnish and sometimes with a colored enamel.—AMERICAN PLYWOOD CORP., New London, Wisc.

There is already some commercial development of the partial pre-finishing of plywood by the plywood manufacturer. Some of the Douglas-fir plywood that appears on the market, for example, has received an application of a wood sealer at the plywood factory. The sealer most commonly used for this purpose seems to be one of the fast-drying synthetic resin varnishes. I think probably that careful inquiry would show that such pre-finishing is likewise practiced for quite a variety of other types of plywood in different parts of the country.

It should be pointed out that where plywood must be furnished in a condition suitable for receiving a wide variety of finishes, including natural wood finishes, there are distinct limitations on the degree of protection that can be provided by surface treatment at the plywood plant. The treatment must sink into the surface of the wood, leaving it possible to apply stains reasonably well; and it must be as nearly colorless as possible to avoid changing the appearance of the wood too much. Within these limitations the degree of protection that can be furnished wood against change in moisture content is necessarily small. The sealing action for holding out succeeding coats of finish likewise must be somewhat short of complete adequacy.

In the aircraft field, even this degree of pre-finishing is not generally practicable because the ply-

Questions; Answers

Questions are welcome and will be answered promptly by mail. Readers are invited to prepare and send in additional information relating to any of these questions and answers.

for Person or Product careful grooming is essential to success

Carefully groomed people are automatically considered successful leaders . . . and it's just as true of commercial products!

The type and quality of finish on your product can make it a leader in its field or an ordinary also-ran.

Many manufacturers have found that a carefully planned, distinctive finish increases sales-appeal tremendously in addition to providing the necessary protective coating. Submit your product to our Creative Studio staff for analysis. New and original finishing schemes, equal to or superior to materials formerly available, are created for all types of products made of either wood or metal. Write for complete information.

ROCKFORD VARNISH COMPANY

Manufacturers of Protective and Decorative Coatings

ROCKFORD, ILLINOIS

wood, when received at the aircraft factory, must have a surface capable of being glued firmly and reliably. Plywood used for a stressed wing covering, for example, is glued to the cap strips of the ribs and spars in order to hold it in place. This gluing must develop the full strength of the wood at the glue joints, in order to have the plywood function properly as a stress bearing member.

So far we do not know of any protective finish that can be applied to wood and still leave the surface capable of being firmly glued with casein glue and the resin glues commonly used in aircraft work. It would be exceedingly helpful to the aircraft industry if a finish effective in protecting the wood against change in moisture content could be applied to plywood and still leave it capable of firm gluing, because one of the serious bottlenecks in the construction of wooden planes turns upon this problem of gluing plywood skins, and likewise providing a protective finish on the interior faces.

In the general replacement of sheet metal with plywood, perhaps one of the most important points to be borne in mind is the fact that plywood is wood and takes a finish suitable for wood rather than for metal. In other words, the replacement commonly involves redesign of the finish, even though the requirement may be a finish having essentially the same appearance as that previously used on sheet metal. —F. L. BROWNE, Senior Chemist, Forest Products Laboratory.

In the past we have furnished fir plywood with a factory-applied primer. This was done by putting the panel through a roller coater. Several companies manufacture a primer that tends to keep the grain of fir from raising and also tends to eliminate hairline checks.

With the thought that you would be interested in receiving it, we are enclosing a folder describing "Firzite", made by Breinig Brothers.—U. S. PLYWOOD CORP.

Quoting from the "Firzite" folder:

"When fir is painted or enameled, in all too many cases it still looks like fir. This is because of the fact that, regardless of whose first-class paint materials are used, the first coat penetrates the spring and summer growths unevenly. The result is that a wavy appearance is developed which shows through the succeeding coats, as if the grain were raised.

"Likewise, when fir is stained, the result generally is a very pronounced grain which gives the work that so-called 'wild' appearance.

"Breinig Bros. have solved this problem with the introduction of 'Firzite' — a superior pre-finishing treatment for fir plywood. It penetrates the spring and summer growths evenly, permitting the subsequent coats to 'take' smoothly and evenly in a manner comparable to the finished effects obtainable on white pine. 'Firzite' averages 600-sq.ft. to the gallon, although contractors consistently report coverage up to 800-sq.ft."

Rubbed Varnished Tops Print

We are having some varnish-print trouble and would appreciate a suggestion from you about how to eliminate this. Our finishing schedule is: Finish today, rub tops next day, pack the next day.

We use a quick-drying good quality varnish and have no prints on

IN STEP WITH THE TIMES

Industrial Finishes

that make the most of available raw materials to give you greatest durability, together with attractive appearance and economy.

FOR APPLICATION BY ALL METHODS

JAMES B. DAY & CO., CHICAGO

the side and on fronts—only on the tops, which leads us to believe the rubbing has something to do with it. We rub with pumice stone and paraffine oil.—W. Furn. Co.

As you have probably suspected, your paraffine oil (used for rubbing) is probably softening the varnish that is rubbed—softening it sufficiently to permit "printing", even on the next day when you pack the goods for shipment.

One of our experts suggests that you allow your varnish to dry a day longer before rubbing; then rub and pack for shipment the same day. The theory here is that the additional day of drying will allow the varnish to become harder and less susceptible to softening by paraffine oil.

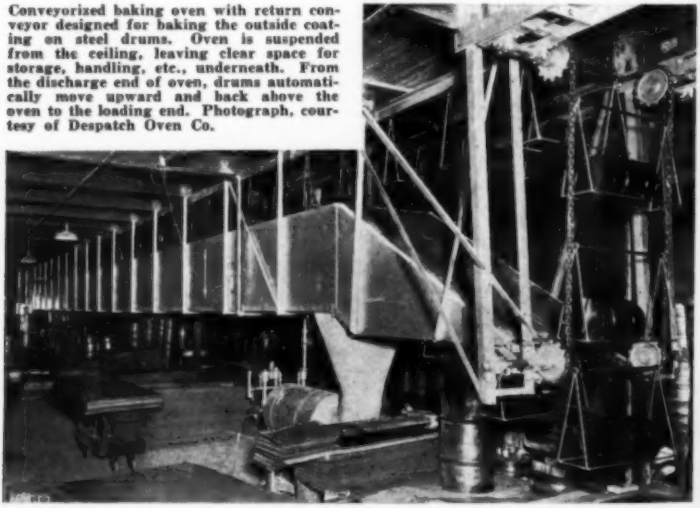
If you prefer some other course, you might rub with water and pumice; then wipe the surface with oil. Many furniture finishers dislike to use water for rubbing because of its possible or probable bad effect on glue joints, thin veneered surfaces, etc.

You might take up the matter with your varnish manufacturer and ask for a varnish formulated to resist the action of paraffine oil. Some varnishes, made with soft gums, are more affected by paraffine oil than others.

As a last resort, you could consider the possibility of changing makes of varnish. However, we do not recommend this until after you have exhausted all other possible remedies, including taking up the matter with your supplier.—ED.

Etched Brass Fill-in Paint

We would appreciate information as to the procedure to follow in the fill-in of etched brass sheets. We



Conveyorized baking oven with return conveyor designed for baking the outside coating on steel drums. Oven is suspended from the ceiling, leaving clear space for storage, handling, etc., underneath. From the discharge end of oven, drums automatically move upward and back above the oven to the loading end. Photograph, courtesy of Despatch Oven Co.

R
F P
GEARED for SPEED
● HERE'S SERVICE designed to meet your urgent war needs in finishing materials—
Shipment same day or within 48 hours on most items . . immediate quotations . . . laboratory analysis on formula or finishing problems in a matter of hours . . . prompt information on whether we make a certain defense item and if not WHERE YOU CAN GET IT!
That's why merchandise is rolling out of our plant . . . to finish AIRPLANES, AIRCRAFT INSTRUMENTS, PROTECTIVE COATINGS FOR MACHINE TOOLS, QUARTERMASTER CORPS ITEMS and ESSENTIAL AUXILIARY ITEMS both large and small.
This service is yours to command along with the Randolph warranty of quality.
Dopes — Thinners
Lacquers — Synthetics
RANDOLPH
FINISHING PRODUCTS CO.
Carlstadt New Jersey

are having difficulty in obtaining a white filler for the etched portion of our sheets.

Our procedure is to coat the entire sheet with the filler material, and remove the excess filler by means of a squeegee or a cloth. But this also causes the filler to pull out of the etched portion, which is below the surface of the material.

Any information you can give us regarding the material to use, or the procedure to follow will be greatly appreciated.—M. Mfg. Co.

We have taken up this matter with the superintendent of finishing at our local name-plate factory, and, after reading your letter, he says there is not enough information given to enable him to suggest a satisfactory remedy for your trouble. For example, he is wondering how deeply the etching is on your brass plates or sheets.

Have you investigated the possibility of using what is called "resist" over the smooth surface (perhaps roller-coating it on, or masking the etched part and spraying it), then spraying the entire surface and baking the finish before removing the material from the smooth unetched portions of the metal? The purpose of the "resist" is to prevent the coating from adhering to the smooth surface. Then, after the coating is baked it will adhere to the etched surfaces, but can be easily removed from the smooth surfaces by wiping it off. This would prevent the material from being pulled out of the etched portions of your metal.

It would seem to us that if you used a squeegee, such as those used in connection with graining from an etched plate, you could remove the excess material from the smooth surfaces without pulling it out of the etched portions.—ED.

Clean Air Guards War Production

ASSISTING in the manufacture of bombsights, Army binoculars, tanks, and guns, and in the preparation of blood plasma are Westinghouse Precipitrons to clean the air, according to George F. Begoon, manager of the company's Precipitron division.

Army and Navy laboratories, arsenals and defense factories are using the electric air cleaners to trap

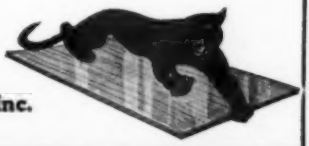
Before shipment to Army and Navy laboratories, arsenals and defense factories, these air-cleaning units, called Precipitron cells, are given a final inspection at the Westinghouse Cleveland works.

KILNVAR belongs on your finest cabinet woods . . . . *for beauty, for easy finishing!*

Many furniture manufacturers have found KILNVAR best for their specific finishing problems. Their finishing needs are, in many cases, **your** exact needs! The Schaefer representative in your territory will gladly analyze your finishing problems as against the merits of KILNVAR. This modern finish resists hard knocks, assures lasting depth of beauty. BAKE-SEAL, for undercoat, seals quickly—gives a tough foundation for enduring finish. Get the facts about these materials, now, from your Schaefer representative!

FOR EITHER FORCED OR AIR DRYING

KILNVAR is offered in Gloss Rubbing, Semi-Gloss and Flat Effects.



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Louisville, Kentucky

DESPATCH WILL SPEED UP PRODUCTION OF FINISH BAKING

Many standard box sizes available. Also a fast, efficient engineering and production department to prepare special finish-baking ovens to handle any material. New features to speed up production and improve finish baking. Prompt deliveries maintained.

TOOLS FOR WAR

Write for Bulletin No. 51K, or call for a Despatch representative.

DESPATCH OVEN COMPANY

MINNEAPOLIS MINNESOTA

air-borne dust, smoke and noxious fumes. The cleaner removes up to 95% of all dirt particles from the air.

In 16 Naval air stations from Florida to the Philippines, the Precipitron is supplying clean air to the rooms where bombsights are overhauled and repaired. All dust must be kept out of the optical systems of bombsights if they are to maintain great accuracy.

The air cleaners are also used in eight American defense plants producing Army binoculars, range finders and submarine periscopes. Clean air in these factories prevents the collection of dust on precision lenses during assembly.

Fifteen hundred Precipitron cells will soon be at work in a Naval Ordnance plant where bombsights are manufactured. That number of cleaning units will supply 900,000-cu.ft. of clean air a minute. In an arsenal, they are banishing dust from rooms in which delicate optical instruments, bombsights and anti-aircraft ammunition are manufactured. In another, where parts of Army tank bodies are welded together, a unit removes welding fumes from the factory air to protect the health of workers. In a third arsenal Precipitrons keep dirt off the delicate polished surfaces of precision gauges.

Two Defense Handbooks

Two important defense handbooks, one summarizng all price and priority regulations to date and the other listing every product subject to export control, have just been published by the N. Y. Journal of Commerce.

All government and voluntary price controls and priorities are brought up to date in the Price and Priority Digest. In addition to giving the status of nearly 200 commodities and commodity groups, prospects for civilian allotments are also reviewed for quick reference on part of the purchasing executive.

The new edition of the Export Control List embraces 32 pages of product listings with all licensing and destination symbols posted next to each item. It is the fifth revision of what has become recognized as the most authentic export guide available today.

Both supplements have been published in handy tabloid form and may be had at 10 cents each from The N. Y. Journal of Commerce, 63 Park Row, New York, N. Y. A limited supply of O. P. M. and O. P. A. order texts, as published in the columns of the Journal of Commerce is also available at the same price.

I. C. D. FORMULA NINE

NON-INFLAMMABLE « *wax free* REMOVER »

for paint, varnish, lacquer, baked enamel, cement, etc.

EASY TO APPLY—NO AFTER-CLEANING

FOR DEFENSE USE

I-C-D FORMULA 9 is safe, non-inflammable and wax free... can be brushed or sprayed... Doesn't raise grain nor discolor ...it costs less to use... saves time, labor and material... Prompt deliveries to manufacturers with PRIORITY RATINGS.

DEFENSE PROTECTIVE COATINGS—I-C-D Labs. have specialized in formulating and manufacturing non-inflammable protective coatings. If you have a tough defense protective coating problem send in your specifications and requirements for quick action. Write today.

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Interceptor Batting Average 1000%

THERE'S NO TIME TO LOSE—THERE'S JUST TIME TO WIN!

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- GUN STOCKS
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- RADIO INDUSTRY, ETC.
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LIEUT. COMMANDER EDDIE (BUTCH) O'HARE batted 1000% by getting six Jap bombers out of six. He required about a ten-second burst for each one and that's perfection in any league. The aviation production front produced the Grumman interceptor in which "Butch" O'Hare fought so well.

All of us working on the production front realize the necessity for producing "enough of the best in time". Our 67 years experience supported by the production facilities of one of the finest plants in the country enables us to produce government specification materials in adequate quantity and without delay. Listed here are just a few of the war products now being coated with our materials.

Phone, wire or write and let one of our finishing experts help you "Keep Production Rolling."

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★ BUY MORE DEFENSE BONDS

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By the use of CLAREMONT FLOCKS, either Cotton, Wool or Rayon, as a finish on your products you cannot help making profit because the unusual attractiveness obtained is sure to stimulate your sales. The cost is much lower than the mark-up warranted by this unusual finish.

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The country's leading Flock manufacturers

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FINISHING SUPPLIES

Finds us in our new and enlarged office, laboratory, factory and warehouse, under one roof. Our progress and growth during a busy twenty-five years was made possible by the acceptance of our products by hundreds of industrial users in many industries.

We meet the war emergency well prepared to produce and deliver the goods. Listed here are some of the products we manufacture.

Working samples and complete information will be sent on request.

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NEW YORK WOODFINISHERS' SUPPLY COMPANY, Inc.
109 IMLAY STREET BROOKLYN, N. Y.
Established 1917

NEW PERIOD

Infra-Red Paint Drying With Gas Fuel

A 4-page bulletin, 8½x11-in., illustrates and describes several interesting facts about the remarkable possibilities and practical uses of infra-red gas oven equipment—the combination of radiation and convection heat—for drying paints and enamels.

Quoting from the bulletin:

"We are often able to reduce the cost of drying to less than one-half the cost of your present method. Furthermore, the time will be reduced, depending on the application, to approximately one-half that required by ordinary methods of paint drying."

Copies of this bulletin can be obtained from Infra-Red Equipment Corp., 1225 W. Washington Blvd., Chicago, Ill.

Resistoflex Catalog

The Resistoflex Corp., Belleville, N. J., announces a new 24-page catalog showing the various products made of oil-proof and solvent-proof Resistoflex PVA compounds. Besides giving physical properties, resistance and permeability tables, the catalog tabulates the company's complete line of hose. Also illustrated and described are Resistoflex solvent-proof industrial gloves and aprons, mechanical molded goods, sheet stock, coatings, adhesives and paints. The basis of all Resistoflex products is a tough, flexible rubber-like synthetic resin known as Resistoflex PVA, which is entirely unaffected by all fuels, oils, organic solvents, and such inorganic solvents as carbon disulphide. Methods of fabricating the various Resistoflex products are also shown pictorially in the catalog. A copy will be sent to any executive requesting it on his letterhead.

"Paints for Victory"

"Paints for Victory" is the title of a new catalog, just produced by the O'Brien Varnish Co., South Bend, Ind., containing a comprehensive listing and description of the many paint and varnish products being used in war production and construction. This catalog was designed to serve as a complete and handy guide to the purchasers of such materials. It contains complete descriptions of all principal Federal Specification paints, varnishes and lacquers, cantonment paints, camouflage paints and color chips showing the official colors in which these products are used.

In addition it contains descriptions and color chips for ES-680 Specification materials used by the Army Q. M. Corps Motor Transport Division (olive-drab lusterless enamel and primer), shell lacquers (Ordnance Dept. Spec. 3-162a) and description of the widely used O'Brien system for finishing fir plywood in demountable houses. The catalog is right up-to-date: it also contains complete listings and descriptions of the "Emergency" Specifications recently released by the Federal Specifications Board. It should prove an invaluable assistance to builders, painting contractors and manufacturers.

New Books

CATALOGS
CIRCULARS
NEWS RELEASES

Correct Your Defective Eyesight

A 10% speed-up in war production would result if defense workers with defective eyesight had their eye errors corrected, according to Dr. T. L. Story, medical director of the American Optical Co. Reporting that 50% of men between 21 to 50 have poor vision, he stated that many of these men do essential war work without the glasses they need to maintain a steady flow of production.

To conserve eyesight and increase production, he advised industrial workers whose eyes are below par to have their vision corrected to obtain eye comfort and efficiency. He suggested also that visually defective men who are engaged in eye-hazardous occupations should wear safety goggles whose protective lenses are ground to prescription.

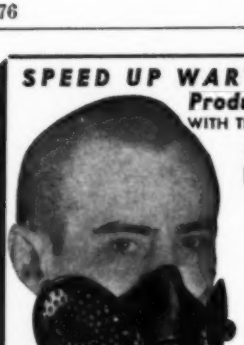
An eye conservation program of this nature, Dr. Story added, would contribute materially to the production goals set by President Roosevelt for 1942.

"Blast Cleaning" Catalog

A revised edition of "The American Line", a 12-page reference catalog of the entire line of products manufactured by the American Foundry Equipment Co., 555 S. Byrkit St., Mishawaka, Ind., has just been released.

This profusely illustrated catalog presents a complete summary of each of the following American products: Wheelabrator airless blast-cleaning equipment, Tumblasts, Tablasts, spe-

SPEED UP WARTIME Production!
WITH THIS NEW



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★ Full U. S. Bureau of Mines Approved (No. BM-2142) against Type A (Silica), Lead and Nuisance Dusts. Equip your workers with this new COMFORTABLE and SAFE Respirator for FASTER DEFENSE PRODUCTION. It's the "Cesco No. 94." Write

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COLOR formulas and Useful Color Cards. Description. Properties, Theory, Harmony and Management of Colors. Furniture and Polychrome Finishing. Color and Light; Description of Color Pigments; Properties of Color Pigments; How Colors Are Prepared for the Trade; Basic Paint Pigments; Painting Oils; Volatile Thinners and Dryers; General Paint Mixing Methods; Color Theory, Principles and Use; Colored Paint Mixing, Methods; Mixing Special Purpose Materials; Color Harmony and Management; Selecting Color Schemes.

296 Pages, Fully Illustrated with Color Chart and Drawings, Cloth. Price..... **$2.00**

INDUSTRIAL FINISHING
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cial cabinets and the new portable Wheelabrator; Dustube cloth-bag type dust collectors; high efficiency cyclone dust collectors; wet disposal unit for dry-type dust collectors; sandcutters; sandblast equipment; rod straighteners and the American-Heanium Long-Life blast nozzle.

Also included are operating views of typical installations of these products in leading industrial plants. An interesting section is devoted to a brief description of the mechanics, applications and advantages of the airless Wheelabrator method of abrasive blast cleaning.

A copy of this general reference catalog No. 40, may be obtained directly from the manufacturer.

Spray Painting Bulletin

An 8-page bulletin, 8½x11-in., printed in black and red, lists, describes and illustrates a line of spray-painting equipment which is being manufactured by Master Mfg. Co. (formerly Burning Brand Co.) 1400 W. Fulton St., Chicago, Ill.

Portable Blast Cleaner Bulletin

A 4-page bulletin, 8½x11-in., printed in black and yellow, illustrates and describes a new and interesting development — the portable airless blast cleaner for dry cleaning rough irregular-shaped castings. Write the manufacturer for a copy—American Foundry Equipment Co., Mishawaka, Ind.

Polytect Finishing Booklet

A 30-page booklet (pages 8¼x5½-in.) entitled, "Polytect for Art and Craft", describes and illustrates how to do several kinds of finishing with the product, "Polytect", manufactured and sold by Polytect Inc., 34 E. 12th St., New York, N. Y. "Polytect" is a coating which comes in the form of a creamy paste, ready for use. It is made in a variety of colors and adheres equally well to wood, plaster, clay, paper mache, concrete, etc., without preparation of the surface.

Pickling of Iron and Steel

"Modern Pickling of Iron and Steel" is a new 12-page booklet published by The Enthone Co., 442 Elm St., New Haven, Conn.

This booklet describes the company's Acid Addition Agent, to be used in both cold hydrocloric and hot sulphuric acid pickles. The use of this addition agent is stated to result in faster pickling, reduce attack upon the steel, saving of acid and reduction

of fumes. The use of the material for pickling of springs to prevent embrittlement and in electrolytic pickling is described. A special use in hydrochloric acid, for stripping heavy chromium coatings, is also explained.

New Safety Folder

The 4-page folder entitled, "Horse Sense", was prepared for Industrial Engineers interested in production as well as safety. It gives valuable information on equipment which will reduce accidents through the intelligent use of compressed air. The safety installations described are not only easy to install and operate, but the most interesting point is that they increase production. The folder is available by writing direct to A. Schrader's Son, 470 Vanderbilt Ave., Brooklyn, N. Y.

Binks New Catalog No. 80

Binks New Catalog No. 80, in its customary red cellophane covers, and showing everything necessary for successful spray painting and finishing, is just off the press.

The major part of the Binks Mfg. Co. business, at the present time, is war production work, consisting of complete spray-painting installations, paint circulating systems, spray booths of both dry and water-wash types, exhaust systems, and automatic spray-finishing equipment for the coating of bombs and shells. Views of many large installations are included in the book.

A copy of this finely printed and beautifully illustrated catalog will be mailed on application to any one interested who will write on his company's letterhead. Address: Binks Mfg. Co., 3114 Carroll Ave., Chicago.

Attractive, informative, uptodate, complete.

"VICTORY" FINISHES

Army-Navy Aeronautical Specification
Nitrate Cellulose Lacquers, Dopes, Thinners and Primers

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Quartermaster Corps
Olive Drab Synthetic Enamels

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Type I or II
Black Acid-Proof Ammunition Paint

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Wrinkle Finishes

●

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Industrial Division

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ST. PAUL, MINNESOTA

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Industrial FINISHING

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Editorial

Furniture Factories to Enter War Production

Excerpts from a talk delivered by D. L. Jordan, before the American Furniture Mart Press Club, in Chicago, April 28, 1942.

Furniture plants throughout the nation will be rapidly drawn into war production, and they will present a mighty force for increasing the flow of parts for aircraft, ships, and other supplies necessary to win this war. The battle for production will be the most important thing we have ever engaged in, and will require all the ingenuity we possess and can command. It will mean the curtailment of production for civilian use. This has happened in so many industries that the furniture industry cannot hope to escape.

We are rapidly approaching the time when conversion to war production may be necessary to survive. Since it has been necessary for me to give some time and study to this matter of conversion, I would like to outline a few of the necessary steps in that direction.

First, curtailment of production for civilian use. Second, surveying of the industry, plant by plant. Third, spreading of war orders. Fourth, conversion of facilities, transfer and retaining of workers. Provisions of materials for both defense and essential civilian production; assurance of efficient and speedy production development; and use of subcontracting to the fullest. The conservation of strategic materials.

There are two basic types of conversion: First is the conversion by individual plant; and second is a large-scale conversion of an entire industry, promoted, planned, and supervised by the WPB, the Army or the Navy. It is important for any business to understand this blueprint for large-scale conversion in order to know just how to fit in an industry-wide program.

Here's what one looks like:

First, an organized study of the industry's facilities; second, rushing that particular industry's facilities into the over-all procurement needs of the fighting services; third, necessary cost and production study; fourth, any necessary retooling; fifth, placing the contracts and guiding the units of the

industry into their new production responsibilities.

We, as manufacturers in the furniture industry, must realize that men in the front lines need everything that we can turn out; and they need it fast. This war cannot be won in our spare time. This war will be won on the production front. For years now, the armed forces have recognized that modern war is a headon clash between the productive capacities and reserve corps for the production battle-line, that has been built up.

With the declaration of war, this entire reserve corps and every other business resource must be called. Our primary objective is to produce with maximum speed the maximum quantity of weapons which are needed for victory.

In order for the industry to take its full part in the Victory Program, I think we should gear for war production in the following manner:

Converting existing machinery to war production; re-designing our production for war use; re-tooling for war production; using our financial strength, management, and engineering skill, and other facilities to do an assembly or subassembly job, or to coordinate and supervise the production activities of a group of smaller plants.

The most substantial contribution that we, as an industry, can make towards the winning of this war is to throw the highest possible proportion of our business resources into the production at the battle front.

Of course, there will be a lot of factories that cannot convert; the job cannot be done overnight; it must be done in an orderly, economical manner, to conserve manhours and material. There will be a lot of furniture that can be produced while this conversion is taking place, and a lot of factories that can continue to produce, and that cannot be converted. In this process of conversion much furniture will continue to be produced, and should take care of this demand, and also that which is absolutely necessary for civilian use.

I think you will agree with me, however, when I say that when the production of furniture for civilian supply interferes with the war effort, there is but one answer—*the war effort must come first.*

Fire Extinguishing Systems

A revision of the standards for foam and carbon dioxide extinguishing systems was adopted recently by the National Fire Protection Association upon presentation of a report from its committee on special extinguishing systems. The chairman of the committee presenting the report is Mr. A. L. Cobb of the Eastman Kodak Co. *Such systems are installed in industrial plants to protect special hazards such as dip tanks and spray booths, and for outdoor hazards such as oil tanks and containers of other flammable liquids.*

The foam used in such systems is of two types. One is suitable for use on fires in flammabe liquids not miscible with water such as petroleum and its products. The other is used on fires in liquids that are miscible with water, such as alcohols, esters, and acetone—and it may also be used on petroleum products. The foam is supplied from manually controlled pumps, automatic pumps, air pressure tanks, chemically generated pressure tanks, gravity tanks and foam generators. When applied to fire, the foam blankets and smothers it.

The standards adopted regulate the details of supply, mixing, discharge outlets, automatic release devices and maintenance.

Carbon dioxide systems are used in many industrial locations and the details of their installation and operation are closely regulated by the new standards. Such systems release carbon dioxide gas which smothers fire by excluding oxygen from it. They operate by completely flooding enclosed space with gas, or by local applications of gas on particular hazards.

"Production Lags" Slow Down Our Military Progress

"Keep 'em Rolling" is a splendid slogan, but back of this highly desirable accomplishment, every individual in every organization must have and deliver "what it takes".

We must avoid, prevent, remove or overcome the thousand and one things than can and do hinder the "keep 'em rolling" program from functioning 100% (preferably 110%). Let's examine some of the possibilities. Here are only a few:

A factory fire, accident to workmen, conditions that may jeopardize the health and safety of workers; lack of cooperation among workers and executives; wasted materials, supplies, labor and time; careless, indifferent or unskilled workmanship that results in rejects; defective, unguarded or hazardous equipment. You can name many others.

Anything that can possibly slow down, interrupt or interfere with the smooth operation of our war-products factories and their maximum output, is harmful to the united efforts of the United Nations. It is a damaging blow to our boys and girls in uniform — and plenty of them are going into uniform and going overseas in the patriotic service of their country, for our future protection.

Working here at home in safety, with pleasant surroundings and enjoying comfortable luxuries, we can at least give our full efforts and cooperation by doing better work and more of it, to back up those hundreds of thousands of young Americans assigned to real hazardous tasks which will cost tens of thousands of them their lives.

While America's finest are alive, able and eager to perform their tasks, let's furnish them with all the equipment and materials they can use. They are helpless without the products of our factories, delivered to them in good condition and early for this is definitely a Machine Age War, with TIME an all-important factor.

SAVE 50% ON STAINS

Mix your own liquid stains from Campbell Dry Stains. We have a type suitable for any purpose. 2 to 5 oz. makes a gallon. Any stain on market easily duplicated. To prove it, send us sample of stain you are using. We'll show you how to make it—at a big saving.

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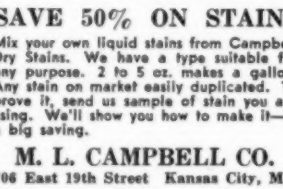


When You Give to the U S O

Exchange Ideas, Suggestions, Information on Finishing

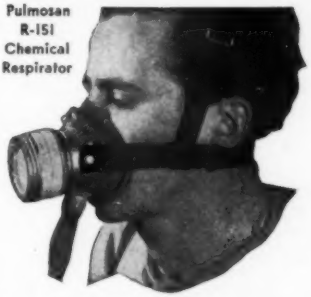
Now, more than ever before, users of protective coatings in this country need the benefit of a generous exchange of experiences and information in regard to the technique of getting results quickly, economically and efficiently. Problems in the protective coatings departments of all manufacturers have multiplied many fold.

First, there is the conversion of numerous factories, partially or entirely, from the production of civilian goods to war products. This has imposed new burdens upon management and all of the productive personnel. It has called for rapid and drastic changes in equpment, products, methods, supplies and requirements. Any change in only one of these things can and often does spell trouble in the finishing or painting department. Add all of them together in one plant, at one time, and you have plenty of problems.

Then there is the problem of getting experienced, skillful, dependable men for supervising and doing the work. Many concerns who have contracted to make war products have no production painters or finishers, and none are available unless they are hired from some other firm which is probably also doing war work.

Product painting looks easy—and it is easy when everything has been set up to function perfectly and while it is working smoothly—but this work has many complications, and it doesn't continue smoothly very long without expert and skillful supervision. Emergencies, difficulties and problems arise frequently. And, on top of this, one can expect changes in the specifications of products, materials, meth-

Pulmosan R-151 Chemical Respirator



Cartridges Last Longer

The R-151 Respirator has an outer dust filter which protects chemical cartridge against clogging. Simply replace inexpensive dust filter — get longer service from cartridges, keep down breathing resistance. Write for details and prices.

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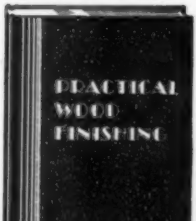
Dept. IF, 176 Johnson St., Brooklyn, New York

PRACTICAL WOOD FINISHING

The Most Complete Handbook On Finishing Fine Woods Ever Written

Tells EVERYTHING you need to know about Wood Finishing. Includes types of unfinished furniture, choice of finishes, brushes, accessories, precautions, natural finishes, staining, filling and bleaching, varnish, enamel or paint finishes, finishing with a spray gun and many other fascinating practical subjects. Also includes complete section on furniture repairing and refinishing. Four pages of 32 different foreign and domestic woods illustrated in natural colors. 112 pages fully illustrated.



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1142 N. Meridian St. Indianapolis, Ind.

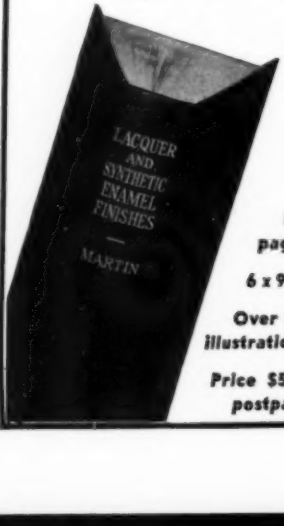
LACQUER and SYNTHETIC ENAMEL FINISHES

By Ray C. Martin

The author takes up the raw materials that enter into the manufacture of these important finishes and includes laboratory formulations and testing, manufacturing methods, requirements of many types of finishes for various industries and products, methods of analysis, methods of applying finishing materials, chapters on furniture finishing and automotive finishing, a glossary of terms used in the industry with clear explanations of what they mean, and an alphabetical index of subjects covered in the book. Price $5.50 postpaid; cash with order.

Order from

Industrial Finishing
1142 N. Meridian St.
Indianapolis, Indiana



526 pages.

6 x 9-in.

Over 100 illustrations.

Price $5.50 postpaid.

ods or requirements almost any time.

Experienced service men from the paint and equipment manufacturers are doing a splendid pob in helping out with these war production problems in the metal cleaning, surface smoothing and protective coating departments, but there are too few of these men to be everywhere at once. Some companies have to wait a long time for an expert to arrive and help them out of a jam. They can't afford to remain idle while waiting, and they can't always place too much dependence on the expert, unless they know him, because he may be a substitute expert—one who lacks the necessary background of long practical experience in that particular field.

INDUSTRIAL FINISHING Magazine invites a more extensive discussion of these problems and a more liberal exchange of suggestions, comments and recommendations. The problem confronting your protective coating department today may have been solved elsewhere some time ago, and the information may be on file in this office or in back copies of the magazine. On the other hand, the problem you solved so nicely yesterday or today may be confrontng more than 100 other widely scattered manufacturers tomorrow or next month.

All of them, like you, are working toward one objective—to help win the war as quickly as possible. If the way you solved the difficulty is made available to them promptly, we are all benefited by the prevention of a lag or interruption in U. S. war production, and you help to speed the day when the war will into the development, production nto the development, production and sale of civilian goods on a profitable peace-time basis.

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• LACQUERS
• ENAMELS
• VARNISHES
• SYNTHETICS
SPECIALISTS IN SPECIFICATION FINISHES

Letters from I. F. Readers

(Continued from page 8)

po-Phenol serves to carry wax deep into the pores and so provide a sealing-in surface finish. The national emergency has made it imperative that we find another type for finishing furniture.

We would also appreciate any knowledge of a product known as "Rez", which is said to have a penetrating action. Any information as to the sources of supply and plants that impregnate wood would be greatly appreciated.—O. E.

Rust Proof Coating

We would appreciate further information with reference to the "Rust Proof Coating", as listed in your February issue.—B. R. Co. (Belts and Buckles for Men.)

We are referring you to the manufacturer.—ED.

Hardware Finishes

Would appreciate it if you could furnish us names of some firms that are offering finishes for steel casket hardware. We have been using bronze powders, which have an aluminum base, but will be unable to use them for this class of work during the emergency. — W. B. & Co. (Burial Cases since 1894.)

Information furnished.—ED.

Abrasives; Masking Tape

An interesting new booklet (28 pages 8½x11-in.) has just been issued by the Advertising Department of the Minnesota Mining & Mfg. Co., entitled "3-M Products Used In The Victory Program."

The use of abrasives on various machines, along with the description of Scotch Adhesive Tapes, supplies the subject matter and shows how time can be saved on many operations by using these materials and equipment. For those who are doing grinding, finishing, polishing, or are interested in saving time with the use of Scotch Tape, it will pay to write for a copy of this new booklet.

Just address a card to Minnesota Mining & Mfg. Co., Advertising Department, Saint Paul, Minn.

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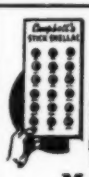
Reg. U. S. Pat. Off.
WOOD BLEACH
The Sufficient Method Producing Light-Wood Modern Furniture—Cheerful Interior Woodwork
L. R. van ALLEN COMPANY
(Pat. Licensee)
406 N. Wells St. Chicago


Write for FREE COLOR CARD
STICK SHELLAC
Unequalled for repairing damage to varnish, enameled or lacquered finish. Made in transparent and all wood and marble colors in both standard and lacquer grades.
M. L. Campbell Co.
706 East 19th St. Kansas City, Mo.

Can Furnish Heat-Resistant Paint

We notice that on page 84, of your April issue of INDUSTRIAL FINISHING, one of your customers, the T. Mfg. Co., desires to secure information on a heat-resisting paint to replace chrome plating on electric heater grills. This paint is to withstand temperatures from 600° to 800°F. without discoloration. We can furnish such material in

aluminum paint, if your customer is engaged in any sort of national defense work. Of course, there is no aluminum paint available for civilian purposes and we should like to have more information relative to your customer's application, as we believe we are in position to supply them with either aluminum paint, if for national defense use, or a type of pearl gray baking enamel.—Aluminum Industries, Inc.

Can Furnish Wire Stencil Screens

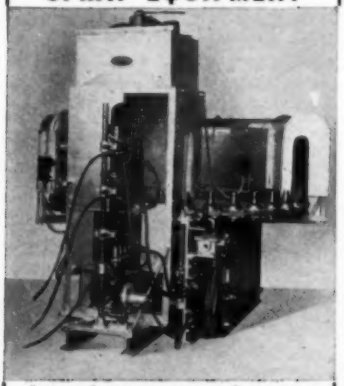
We would like to know the name and address of "L. F. Co." who made inquiry regarding wire stencil screens, as published on page 7, of INDUSTRIAL FINISHING, April issue. We are now furnishing wire stencil screens that require the finest workmanship for precision instruments. — Prairie State Products Co.

We notice on page 7, of your April issue, someone is interested in having information as to who woud be in a position to furnish wire screens for stencil process finishing. It so happens that we have on hand and have had in our inventory for several years, a quantity of copper-wire screens which we have used in the past for making stencils.

We have our own formula for making these from photographic glue, and would be glad to have the opportunity of servicing the company inquiring about this product.—Mirro-Products.

Try HY-POWER WOOD BLEACH
Bleaching operation SIMPLIFIED. By mixture of two liquids, one application gets results usually achieved by two. FREE—Write for booklet and full information on bleaches.
M. L. CAMPBELL CO.
706 East 19th Street Kansas City, Mo.

Automatic and Manual
SPRAY EQUIPMENT



Let us know your requirements.
ECLIPSE AIR BRUSH CO.
392 Park Ave. Newark, N. J.

"Liganto," Skin Protector

Will you kindly send us all available information concerning "Liganto," a skin protector, put out by Simplex Chemical Corp.? It is a liquid which forms a glove-like film upon drying.—S. Rubber Co.

We have forwarded a copy of your inquiry to the Simplex Chemical Corp. at 37-29 33rd St., Long Island City, N. Y., and we feel sure that they will communicate with you promptly, giving you complete information about their product.—ED.

Hammered Effect Finish

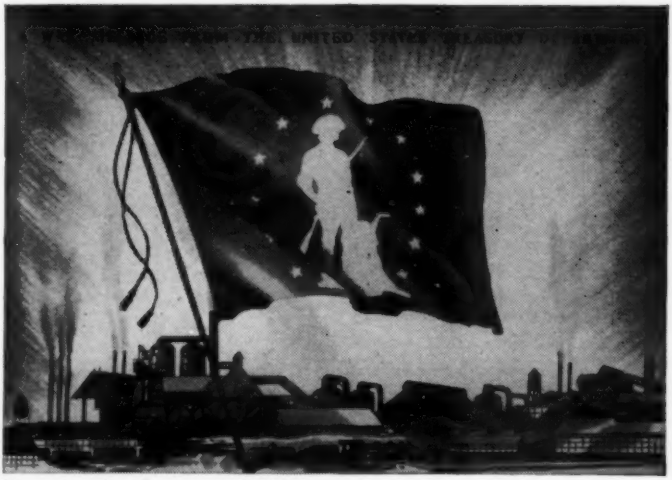
Please supply us with any information you may have regarding "hammer finish" without aluminum, or the manufacturer of same.—L. Mfg. Co.

Information given.—ED.

From Australia

Many thanks for sending January and February 1942 numbers of INDUSTRIAL FINISHING Magazine. They are most helpful in our business. "What have I done with my subscription", I guess you will think. Owing to restrictions about sending cash out of our country, I was held up. But "try again" was my motto, and now I am allowed to send same; please find same enclosed, which I trust arrives safely to you, so please excuse the delay.

May I say a word of appreciation for the January American Furniture Mart Review, by Ruth Hammond. To see photographs of the latest furniture you are using in U. S. A. is of great interest, and to read how they are fin-



Next to the Stars and Stripes . . .

AS PROUD A FLAG AS INDUSTRY CAN FLY

Signifying 90 percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into U. S. Savings Bonds *regularly*, every pay day, with the goal being 10 percent of the gross pay roll allotted to Bonds. You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify. For facts about the Pay-Roll Savings Plan, write Treasury Department, Section D, 709 12th Street, NW., Washington, D. C.

MAKE EVERY PAY DAY "BOND DAY"

U. S. WAR Bonds ★ Stamps

This Space is a Contribution to Victory by "Industrial Finishing"

ished. Wood finishing is always of special interest to us.

We are interested particularly in wood staining with non-grain-raising stains, using ethylene, glycol or methanol thinner. I believe there is a rich brown earth color used as a base bound in a shellac or some other binder, or perhaps Van Dyke brown crystals in ammonia, or water used with and water anelines, to get a quick-drying wiping stain. Have you heard of a type of base we could buy to use with non-grain-raising wood stains? I used Van Dyke brown ground in japan, but it doesn't seem to be quite right, as methanol is the thinner.

I will be glad to hear of any help from your readers. Concentrated aneline colors can be used with this base earth color to finish our mahogany, walnut and oak. What should we have our Van Dyke brown ground in to go with ethylene, glycol and methanol thinners? Thank you for your splendid efforts in compiling the wonderful helpful items in INDUSTRIAL FINISHING.—E. E. Priest, (Builder and Decorator), Melbourne, Victoria, Australia.

Non-Metallic Hamercote

Referring to the January 1942 issue of INDUSTRIAL FINISHING, we would like more information and samples, if possible, on the Non-Metallic Hamercote, item No. 148 (page 42). We would prefer this to be a baking type enamel of copper color.—S. R. E. Co. (Enameling and Refinishing).

We notice an article in your January issue of INDUSTRIAL FINISHING on Non-Metallic Hamercote, item No. 148.

We are interested in obtaining a paint or an enamel for spraying or dipping to match some bright burnished brass parts, and also to match some bronze powder sprayed items.—N. Mfg. Co. (Drapery Hardware).

Information given.—ED.

Saving Wasted Spray

We notice an article on page 27, of the May issue of INDUSTRIAL FINISHING, regarding the "Conservation of Critical Materials in Sprayed Coatings."

We have a number of water-wash spray booths in operation which are being used at the present time mostly on war work, and we would like to salvage the paint from the water. At the present time this sludge is useless. Would it be possible for you to find out from Mr. John J. Zolad, the author of this article, whether he knows of any machinery or equipment suitable for re-claiming this paint so that it can be re-used for the original purpose?—M. Mfg. Co.

We are referring your inquiry to Mr. Zolad.—ED.

We have been very well pleased with the manner in which the article, "Conservation of Critical Materials in Sprayed Coatings," was presented in the May issue of INDUSTRIAL FINISHING. It will undoubtedly stimulate considerable thought on the subject. The finishing industry should be indebted to you for whatever benefits that may be derived therefrom. If you can conveniently spare a few dozen tear sheets we would like to have them for distribution to interested organizations.

You may be pleased to learn that at a discussion of the article with the Industrial Conservation Section of W. P. B. at Washington, on May 25th, one of the officials remarked that he intended to order several thousand tear sheets for distribution by that organization. Such distribution should naturally redound to the credit of INDUSTRIAL FINISHING.—John J. Zolad.

Plated Finishes

Will you please contact the firm that is mentioned in your March 1942 issue, page 7, in regard to a substitute for plated finishes? We are manufacturers of crucifixes and are interested in getting a substitute finish for our metal corpora.—C. C. Co.

Limed Oak Lacquer?

We have a finishing problem which we would like to present to you for possible solution. Can you recommend any substitute for satin lacquer for finishing rift oak in limed oak finishing?—J. B.

We believe there are a number of concerns who can supply what you desire. Accordingly, we are referring this inquiry to some of the companies and we trust that you will hear from some of them soon.—ED.

Fluorescent Fixtures

If possible, we would appreciate your furnishing us with a list of the manufacturers of fluorescent fixtures. If you are unable to furnish this list, we would appreciate your putting us in touch with someone who can.—A. E.

Marbleizing Method

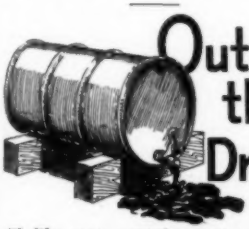
I intend to marbleize small plaster novelties and I am interested in a

method other than the use of oil colors floated on water.

I am familiar with both the spraying and stenciling methods but, due to the irregular shape of the articles, these methods would be quite unsatisfactory.

I hope that you will be able to help me solve this problem.—C. F.

Can some reader suggest a method of doing this work?—Ed.



"I like your magazine very much and get lots of practical information from it."—R. M. Mocham, Pasadena, Cal.

Manufacturers in competitive industries now engaged in war work must sustain consumer interest in their normal products by "appropriate, informative advertising" according to Rudolph Guenther, of the advertising firm of Albert Frank—Guenther Law, Inc.

Guenther warned recently that buying habits and preferences "undergo marked changes" during wartime and that while customers "can disappear overnight" they can seldom be secured in the same space of time.

Pointing to campaigns by steel, motor car, aircraft, oil and rubber companies as examples of constructive maintenance of

(Continued on page 88)

Classified Advertising

Rate: 45 cents per line per insertion — minimum $1.35

RESEARCH CHEMIST.

Excellent opportunity for a chemist who has had several years experience in actual formulation of thermosetting and thermoplastic resins for laminated products and also in paints and coatings. One having had experience with paper products preferred but not essential. Should be creative and capable of going ahead with assigned work. Correspondence held strictly confidential. Address IF-885, care Industrial Finishing.

POSITION WANTED

As foreman finisher. Have had 35 years' experience in bed-room and chair production finishing. Best references. Temperate and always on job. Good health. Address IF-882, care Industrial Finishing.

RESEARCH CHEMIST.

Am now employed, but war makes changes. Will go anywhere. Am a C. E. with several years' practical experience as analytical chemist, research chemist, works chemist, sales manager and general manager in the industrial finish line; experienced with detergents, glycerine, oils, pumps, compressors, paint application, paint drying, process trouble diagnosis, procedure recommendations, etc. Will welcome an inquiry from any concern interested. Address IF-883, care Industrial Finishing.

SERVICES OF MANUFACTURERS AGENT AVAILABLE.

Manufacturers' agent in the St. Louis Territory at present representing manufacturer of Industrial Paints seeking allied lines. Would appreciate opportunity of presenting credentials to Sales Managers interested in this type of representation. Address IF-884, care Industrial Finishing.

WANTED.

Industrial Finishing Material Salesman with sales experience in Indiana and Illinois, selling industrial enamels and lacquers. Guaranteed salary; expenses with bonus. Company is well established in territory and has a volume of business to turn over to the right man. Address IF-886, care Industrial Finishing.

SALESMEN WANTED.

We manufacture full line synthetics, varnishes, colors, stains. Liberal commission. 20TH CENTURY PAINT & VARNISH CO., 30 Roebling St., Brooklyn, N. Y.

WE BUY DIRTY SOLVENTS!

Don't throw away spent cleaning thinner, degreaser residues, etc. Send us a sample for quotation. We also reclaim for customers. DYTEX CHEMICAL CO., 267 Plain, Providence, R. I.

FOR SALE.

LUMINOUS CALCIUM PIGMENT for manufacturing superior luminous paint for black-out illumination. Better than 12 hours after-glow. No grinding required. Also luminous paint and luminous gummed paper. Pigment price per gallon of paint $4.50. Sole producers. AMERICAN LUMINOUS PRODUCTS CO., Dept R., Huntington Park, Calif.

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consumer interest, Guenther said many other companies now are in a financial position to advertise their part in the war effort and pave the way for post-war demand for their normal output.

"The copies of INDUSTRIAL FINISHING which I have received have been very helpful. It is the best book devoted to finishing I have seen. I am certain it will be the means of solving many problems that would otherwise impede production. With times such as we are now facing speed is the all important factor."—Alan F. Saunders, Auckland W. I., New Zealand.

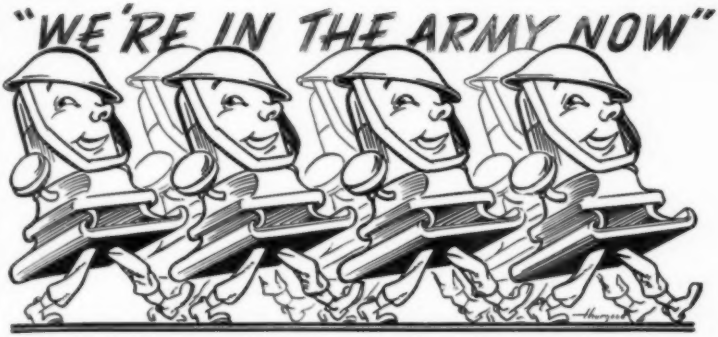
You may be interested to learn that we have also received numerous requests direct, most of them referring to the ad in your publication."—Ronci Machine Company.

"We enjoy your book immensely, and look forward with interest to the January Defense and Review issue."—Lacquer Finishing, Inc., Clifton, N. J.

"Ever since the first issue of your lively little magazine, I have been a subscriber, and despite some fifty years in the painting business (the past thirty-five of which I have been in charge of the purchasing of paint and finishing materials for the Coldwell Lawn Mower Co. and a force of sprayers, stripers and finishers) your magazine often helps out on knotty problems."—J. J. Tartter, Newburgh, N. Y.

"We take this opportunity to repeat our opinion that we consider INDUSTRIAL FINISHING one of the most important magazines that we read and advertise in."—G. Klinkenstein, Mans & Waldstein Company, Newark, N. J.

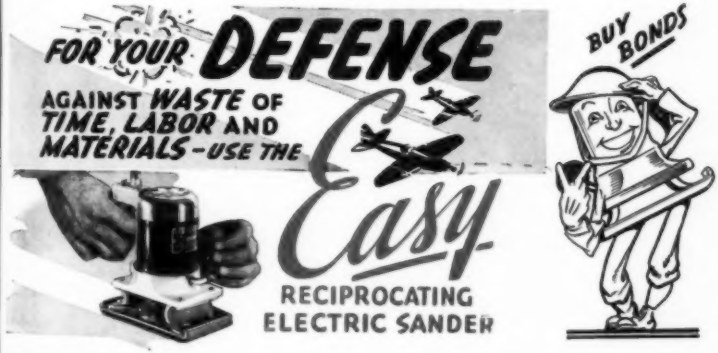
"I have just finished looking over your magazine, INDUSTRIAL FINISHING. It is the best that I have ever seen. The fact that the articles in it are from reliable sources and can be depended upon makes it definitely outstanding. What we need is more of its kind. Will you please place my name on your mailing list and also send me any back copies that you might be able to spare."—Homer F. Cooke, superintendent Venetian Blind Factory, McAlester, Okla.



YES, this latest contingent of "EASY'S" to join the Army numbered 240, and they "joined up" in one order, to help keep our planes flying. Prior to this many "EASY'S" were already serving in various branches of the Army—and also the Navy.

Thousands of other "EASY'S" are also serving in manufacturing plants making equipment and machinery vital to our war effort. In fact, now that *speed* is paramount the EASY Electric Sander is the answer to every new or maintenance finishing application on metal, wood, plastics, composition, or other surfaces.

Don't let slow, expensive hand sanding and the scarcity of skilled labor tie-up your production . . . write us today about the EASY! Mail the attached Post Card.



DETROIT SURFACING MACHINE COMPANY

7434 West Davison - - - - - - - Detroit, Michigan

UNIFORMITY

SYNTHETONE
LACQUERS
VARNISHES
SYNTHETIC FILLERS
SOVATONE STAINS (NGR)
UNDERCOATS
PAINTS • ENAMELS
WIPE-RITE STAINS
SPRAY-RITE STAINS

REFLECT QUALITY
SOUTHERN PRODUCTS

If you have a finishing problem, our technical staff will gladly help you solve it.

From start to finish . . . every step in the manufacture of Southern Varnish Corporation products is controlled with scientific precision. Result: Southern Varnish Corporation finishes are always dependable and UNIFORM.

SOUTHERN

VARNISH CORPORATION

Roanoke, Virginia